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# JOURNAL OF EDUCATIONAL RESEARCH


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JOURNAL *of* EDUCATIONAL RESEARCH

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# A STUDY OF STUDENT-TEACHER RELATIONSHIPS

ROBERT NELSON BUSH
*Stanford University*

*Editor's note:* The interplay of one personality upon another is a complex process. The author presents some preliminary data on teacher–pupil relationships in the classroom.

## INTRODUCTION

THIS study was designed to explore the nature of effective student-teacher relationships. It was completed under the auspices of the Stanford Social Education Investigation. The problem of teaching effectiveness is approached by focusing upon the student-teacher relationship rather than upon only the teacher, or the student, or the teaching method.

The purposes of the project are:

1. To describe the relationships existing between a number of teachers and the students in their classes.
2. To formulate an hypothesis concerning the characteristics of an effective student-teacher relationship.
3. To develop new techniques of research for studying factors affecting the growth and development of students in the school; and
4. To provide in-service training for teachers participating in the study.

The data were collected toward the end of the second semester during May, 1941, in a small private boys' school (grades 9 to 14, 250 students), located in the western part of the United States. An attempt was made to provide an accurate and comprehensive description of the relationships between the nine social science (including commerce) teachers and the students in one of their classes (148 students). The classes in the school were usually small, the enrolment being largely boarding students. Because of the high tuition fees the students are from an economically favored environment. The study thus is not of a representative American educational insti-

tution, but a fact of greater significance is that the school provided much opportunity for close student-teacher relationships.

Teachers, students, supervisors, administrators and counselors all supplied information through tests, rating scales, anecdotal records, interviews, questionnaires and regular school records on these items:

1. Relationships between students' and teachers' knowledge of social science.
2. Relationships between students' and teachers' interest patterns.
3. Relationships between students' and teachers' social beliefs.
4. Relationships between students' and teachers' purposes.
5. Grades.
6. Teachers' knowledge about students.
7. Students' opinions concerning their teachers and courses.
8. Supervisors' opinions concerning the teachers and courses.
9. Teachers' opinions concerning their students.
10. Students' intelligence.

In analyzing the data three techniques were used:

1. Coefficients of correlation (rank order and mean square contingency).
2. Consistency.[1]
3. Case studies of striking examples of student-teacher relationship.[2]

[1] This technique was developed for this study. For example, from each class is selected the 25 per cent of students whose beliefs on social issues are most like those of the teacher and the 25 per cent whose beliefs are most unlike, or in opposition to, those of the teacher. With these cases held constant, the data on other factors are assembled to see if there are any significant and consistent differences between the two groups. Because of the small number of cases in the upper and lower 25 per cent of a class differences between means would not be statistically significant; and to throw all the cases from the different classes together and use the bi-serial coefficient of correlation would probably cover up more than it would reveal. By organizing the data in this way it is possible to note whether the students whose social beliefs are like those of the teacher tend to receive higher grades, to have interest patterns like those of the teacher, and so on. If the tendency is noted in six or more of the nine classes it is considered to be consistent enough to represent a trend. Because of the exploratory nature of this study and the small number of cases involved, all conclusions and generalizations are in the nature of tentative hypotheses and clues only.

[2] Cases of student–teacher relationship of a striking nature are selected for special analysis. For example, all of those students who scored higher than did their teacher on the social science knowledge test are studied. Another group selected for intensive consideration are those students who stated that they dislike their teacher very much personally and about whom the teacher said the same.

## THE CONCEPT OF STUDENT-TEACHER RELATIONSHIP

Among educators the topic of "student-teacher relationships" usually refers to how the student and teacher seem to get along personally. In many cases this is reflected in the discipline which teachers maintain in the classroom. That such is the case is indicated in this study by the fact that when supervisors ranked the teachers according to their "discipline ability" the order correlated plus .90 with their ranking of the teachers on their "relationships with students." If there are no problems of discipline, the relationship in the mind of the supervisor and administrator is satisfactory. The position is here taken, however, that the student-teacher relationship involves much more than the "personal" factor, although the study shows that this is an important element.[8] Here the student-teacher relationship is thought of as an *educational relationship* which is composed of many elements and is influenced by many factors, one of which is the personal relationship. In this study, data were gathered on such factors and elements as the following in the belief that they were all pertinent to the *educational relationship*, i. e., the student-teacher relationship:

1. The relationship between the social beliefs of the teacher and the social beliefs of the student.
2. The student's opinion of the teacher's fairness.
3. The student's personal liking of the teacher.
4. The teacher's personal liking of the student.
5. The student's opinion of the teacher's sympathy.
6. The teacher's opinion of the student's quality of thinking.
7. The student's opinion of the teacher's knowledge of the subject.
8. The teacher's knowledge about the subject he is teaching.
9. The student's knowledge about the subject he is learning.
10. The student's opinion of the teacher's general teaching ability.

(This list is illustrative not complete.)

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[8] Another example of this distinction may be noted by the following reaction when a group of teachers and administrators were asked whether there was any difference between a "good" student–teacher relationship and an "effective" student–teacher relationship. They replied as follows:

"1. The 'effectiveness' of a relationship must be judged in terms of the purpose or purposes for which the relationship was established.

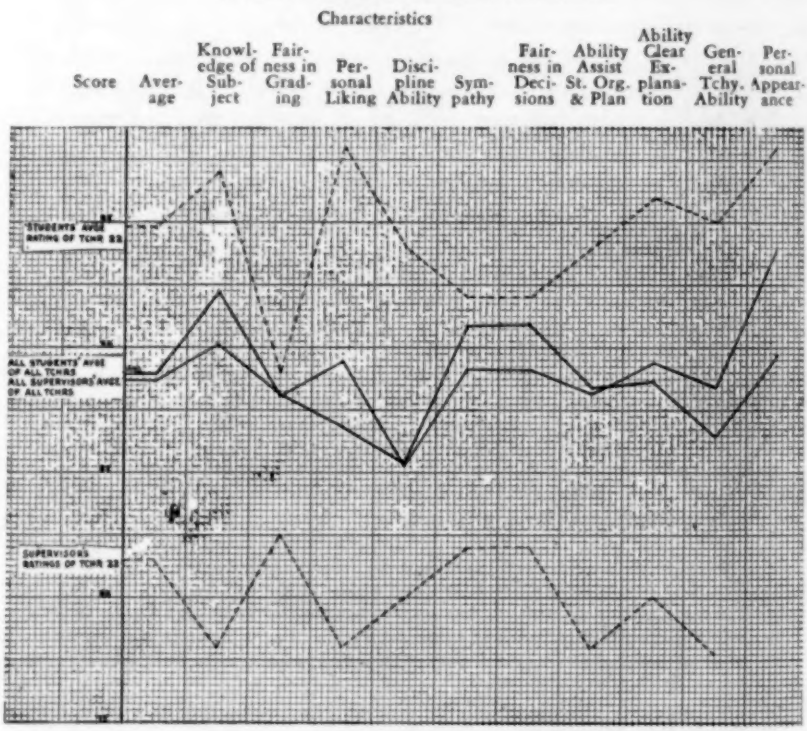
2. In our common speech we usually refer to the 'goodness' of the relationship as an indication of the harmoniousness of the personal relations between the student and the teacher, their mutual personal liking, the extent to which discord is absent, the extent to which the student thinks of the teacher as being fair and sympathetic, the *rapport* existing between the two.

3. Whether 'effectiveness' and 'goodness' of relationship are synonymous depends upon (1) the philosophy of education we hold and (2) whether we are looking at the relationship at a given time or over a period of time."

That the student-teacher relationship looks different according to the parties viewing it is beyond question. For example, there is the case of one teacher whom the supervisors judged to be very low on almost all characteristics whereas his students judged him high on almost every characteristic. (See Chart I.) In this instance students tend to agree with one another and supervisors to agree with one another, but students and supervisors disagree. The study shows that this is not always the case, for

**CHART I**

STUDENTS' AND SUPERVISORS' RATINGS OF TEACHER 22: AN ILLUSTRATION OF STUDENT–SUPERVISOR DISAGREEMENT




Solid Lines ———— = Average ratings of all students and all supervisors for all teachers.

Broken Lines - - - - - = Average ratings of students in teacher 22's class and supervisor's ratings of teacher 22.

students disagree about the same teacher as do supervisors. At this point in the exploratory work no single factor appears crucial in all cases; rather each student-teacher relationship has its own pattern of characteristics. As noted above since the effectiveness of the relationship is judged in terms of the purposes for which it was established, it follows that as different persons have different purposes the relationship will be judged differently when different persons appraise it.

### THE INTERPLAY OF ONE PERSONALITY UPON ANOTHER IS A COMPLEX PROCESS

The suggestion of greatest significance from these data is that the interplay of one personality upon another (teacher and student) in a social environment (the school and classroom) is a complex process that cannot be simply and easily described, certainly not by saying "He is a good teacher," or "He is a bad teacher." Each teacher has a unique pattern of characteristics as does each student-teacher unit. Table 1 gives the average ratings of Teacher No. 14 by his students.* In comparison with other teachers he was high. Table 1 also presents the ratings of one individual in the class with whom the teacher was unable, at least in the opinion of the student, to establish an effective relationship. By way of contrast Table 2 gives the average ratings of Teacher 21 by his students. In comparison with other teachers he was very low. Table 2 also presents the ratings of one individual in the class but this time it is one with whom the teacher was, in the opinion of the student, able to establish an effective relationship. This suggests the wisdom of refraining from broad, dogmatic statements about this and that teacher or this and that method, or this and that type of material when it is out of context of teacher-student relationships. This interaction of student and teacher is the center of the teaching problem.

One factor that may explain the complexity of the process is that teachers and students are striving to realize a variety of purposes. One teacher in the study, for example, emphasizes the intellectual or understanding side of personality and states that his most important purpose for all students is to increase their understanding of the field of knowledge. Another teacher is primarily concerned with the social attitudes of his students. "I'm most concerned about what my students think about war," he says. To him, the major purpose of his work is to change the point of view—the basic

* The rating scale used was that developed by Dr. R. C. Bryan.

TABLE I*

STUDENTS' RATINGS OF TEACHER 14

| Characteristic | Average Rating of All Students in His Class | Ratings of the Lowest Student in Class |
|---|---|---|
| 1. Knowledge of subject | 95. 78 | 90 |
| 2. Fairness in grading | 85. 71 | 60 |
| 3. Personal liking of student for teacher | 90. 00 | 60 |
| 4. Amount learning | 91. 19 | 80 |
| 5. Discipline ability | 91. 90 | 70 |
| 6. Liking of subject | 85. 95 | 80 |
| 7. Sympathy | 87. 86 | 70 |
| 8. Fairness of decisions | 89. 29 | 60 |
| 9. Value of class | 90. 95 | 70 |
| 10. Ability to assist student to organize and plan work | 91. 75 | 80 |
| 11. Ability at clear explanation | 90. 48 | 80 |
| 12. General teaching ability | 96. 19 | 80 |
| 13. Personal appearance | 90. 95 | 90 |
| | Average 90. 74 | 74. 62 |

* Ratings were on the basis of a five-point scale as follows:
100 = highest.
90 = next highest.
80 = middle.
70 = next lowest.
60 = lowest.

TABLE II*

STUDENTS' RATINGS OF TEACHER 21

| Characteristic | Average Rating of All Students in His Class | Ratings of the Highest Student in Class |
|---|---|---|
| 1 | 2 | 3 |
| 1. Knowledge of subject | 84. 38 | 90 |
| 2. Fairness in grading | 81. 88 | 100 |
| 3. Personal liking of student for teacher | 85. 00 | 100 |
| 4. Amount learning | 84. 38 | 90 |
| 5. Discipline ability | 66. 88 | 80 |
| 6. Liking of subject | 90. 63 | 100 |
| 7. Sympathy | 85. 00 | 100 |
| 8. Fairness of decisions | 82. 50 | 90 |
| 9. Value of class | 91. 88 | 100 |
| 10. Ability to assists students to organize and plan work | 85. 63 | 90 |
| 11. Ability at clear explanation | 88. 13 | 100 |
| 12. General teaching ability | 83. 75 | 90 |
| 13. Personal appearance | 93. 75 | 100 |
| | Average 84. 88 | 94. 62 |

* Ratings were on the basis of a five-point scale as follows:
100 = highest.
90 = Next highest.
80 = Middle.
70 = Next lowest.
60 = Lowest.

social outlook—of the students in his classes. Still another teacher maintains that he wants to develop normal and healthy interests in his students, which means broadening the scope of activity for some and narrowing it for others. And still another teacher proclaims that his aim is to help the students improve their relationships with their fellowmen, to assist them to live harmoniously and democratically with each other every day. A different focal point is represented by another teacher who stresses that he is teaching the social skills of reading, writing, speaking and problem solving. No one of the teachers emphasizes one type of purpose to the exclusion of the others, and each maintains that even though he is emphasizing one, the others are achieved indirectly.

Two teachers, both very "liberal," emphasized the social beliefs of the student. However, one teacher was so dogmatic that he antagonized the students, they disliked him, and called him "red" and "communist." His students deviated markedly from his point of view on social beliefs. The other teacher's students reacted more nearly like him on social beliefs. They said, "He always seems to preface his remarks with 'This is my opinion; you are free to disagree with it.'" The latter teacher was probably more effective in developing social attitudes than the former. This suggests that teachers differ in their ability to realize different purposes.

To complicate the picture further, each student comes to the class with a different constellation of purposes. These may or may not coincide with the teacher's purposes. Very likely they will not if the teacher has a single set of purposes for all students. Students in this study were found to vary markedly in the extent to which they were in agreement with the teacher's purposes.

The complexity of the student-teacher relationship is noted again when it is realized that the needs of each student in the class may be different, that the need of a particular student may change from time to time, and that teachers vary in their ability to satisfy a particular need. For example, one teacher in the study, judged by his supervisors to be relatively poor in teaching ability and in his knowledge of the subject, but well-acquainted with his students, spending much time in counseling with them, is judged by students to be rather sympathetic. This might be the exact type of teacher to whom a boy from a harsh home lacking in security and affection should be sent. The student might not be stimulated intellectually but essential

emotional lacks might be supplied and the relationship judged effective. To place this student with one of the teachers in the study who was considered to have a very poor understanding of problem behavior and who students thought was relatively unfair in his decisions toward them would be a serious mistake, even though this teacher had the ability to stimulate high-powered intellectual work in some students.

The foregoing analysis suggests that the effectiveness of the student-teacher relationship is limited by at least:

1. The particular purposes or constellation of purposes of the teacher.
2. The particular purposes or constellation of purposes of the student.
3. The needs of the student.
4. The abilities of the teacher to meet particular types of student needs.

The data suggest thus that an ideal to strive for is a situation in which authorities, armed with an accurate and comprehensive diagnosis of each student and an equally comprehensive and accurate diagnosis of each teacher, place students with teachers best qualified to meet each student's needs and with whom the most effective relationship can be achieved. Sensitive and discerning enrolment officers and administrators have been trying for years to approach this ideal as they have hired and assigned teachers to different kinds of work within the school and given them different types of students in their classes, but they were irreparably handicapped by a lack of knowledge concerning what constitutes an effective student-teacher relationship. Previous research has demonstrated that students' needs can be diagnosed; this study suggests that teachers can be diagnosed to determine where they can be most effective, thus opening a new avenue to the ideal of *matching students and teachers.*

### THE SCHOOL IS A HAPPY PLACE FOR THE ACADEMIC YOUNG PERSON

From the evidence at hand, the present pattern of educational relationships appears to be designed for the academic youth. The student who likes school, his courses and his teachers[4] and who is in turn liked and favored by his teachers[5] has these characteristics: he receives high grades, has a high I.Q., is superior in achievement in social science (sometimes even superior to his teachers) and tends to have social beliefs, interests and pur-

[4] i.e., gives his teacher a high average rating.
[5] i.e., is given a high average rating by his teacher.

poses like those of his teacher. While no cause and effect relationship between these elements is claimed, the pattern is very clear. In view of the statement of philosophy of education of the school studied in which it is claimed that the needs of *all* of its students should be met and that each student should be developed as a well-rounded person, the consistency of this "academic" pattern is somewhat confusing. It may indicate that the academic or knowledge purpose is still paramount in this school. Certainly the school is a happy place for the academic student.

## CRITERIA FOR APPRAISING THE EFFECTIVENESS OF STUDENT-TEACHER RELATIONSHIPS

Fifteen criteria for appraising student-teacher relationships are suggested in this study. When the data are analyzed by means of correlation, consistency and case study (see above) these conclusions are indicated:

| Discriminating | Non-Discriminating | Partially Discriminating |
|---|---|---|
| According to the data, these criteria are suggested as being useful in discriminating between an effective and an ineffective relationship. | According to the data these criteria do not seem to be particularly useful in discriminating between an effective and an ineffective relationship. * | According to the data these criteria are not clear-cut in discriminating between an effective and an ineffective relationship. |
| Does the teacher have social beliefs similar to those of the student?<br>Does the teacher have purposes similar to those of the student?<br>Does the teacher give the student a high grade?<br>Is the teacher well-acquainted with each student in his class?<br>Does the teacher have harmonious personal relationships with the student? (fairness, sympathy, personal liking)<br>Is the teacher effective in his techniques of teaching? (explaining ability, organizing and planning ability, making the subject appear to be of real value to the student)<br>Does the student give the teacher a high average rating?<br>Is the teacher interested and effective in counseling with students?<br>Does the teacher like the student personally?<br>Does the student like the teacher personally?<br>Does the teacher give the student a high rating?<br>Does the teacher consider himself to have an effective relationship with the student? | Does the teacher know more about the subject than do his students?<br>Does the teacher have a good personal appearance? | Does the teacher have interests similar to those of the student? |

* The fact that the teachers were superior in these two characteristics may account for this non-discrimination. However, on knowledge of social science, it should be remembered that some students scored higher on the social science knowledge test than did their teacher.

Hence, the following hypothesis on the major problem is made:

Other things being equal, a maximum student-teacher relationship involves these conditions:

1. The teacher is, in the opinion of his supervisors and administrators, well-adjusted to his job.
2. The teacher has, in the opinion of his supervisors and administrators, keen insight into and objective attitude toward students and students' problem behavior.
3. The teacher considers counseling important, spends much time in counseling with students, uses the guidance files frequently, and knows each student in his class as a person—being acquainted with his background, his interests, abilities, aptitudes and future plans.
4. The student considers that the teacher is fair and sympathetic not only in his dealings with him but with other students as well.
5. The student feels that the class is valuable and that the teacher has a good grasp of the subject and can explain things clearly and assist him in planning and organizing his work.
6. The student likes the teacher personally.
7. The student receives good grades, has superior achievement in social science, and has a high I.Q.
8. The student and the teacher tend to have similar purposes, social beliefs and interests.
9. The teacher likes the student personally.
10. The teacher has the opinion that the student is well-adjusted academically.
11. The teacher believes that he has an effective relationship with the student.

## THE USEFULNESS OF THIS PROJECT FOR WORK WITH TEACHERS

This study was planned to provide in-service education for teachers;[6] experience thus far leads to the conclusion that this purpose has been realized.

The teachers received assistance in evaluation from discussion and use of the results of the knowledge test, the interest index and the scale of beliefs. The scores from these tests served as a basis for diagnosing student needs and planning programs to meet them. Upon completing the questionnaires designed to reveal their knowledge about each student in class, teachers were heard to exclaim, "I didn't realize how little I knew about John!" or, "I should begin to use the guidance files." The guidance secretary re-

[6] This is the primary purpose of the Stanford Social Education Investigation.

ported an increased use of the files by several of the teachers. Better evaluation procedures, better diagnosis of student needs and greater knowledge about students are all classed as in-service development.

The training of teachers in service was facilitated by means of conferences in which it was explained what had been found and what could be done to improve student-teacher relationships. Each case was handled differently. One teacher accepted, even sought eagerly, criticisms and objectively dealt with them. In his case it was possible not only to show him the characteristics on which he was rated highest and lowest but also to indicate comparison with others. The approach was direct. In other cases the approach was made indirectly. Each teacher, however, evidenced interest in the data and a desire to improve. One of the most important points to note here is that the teachers were convinced of the anonymity of the material, the investigator being the only one who could identify the teachers, and he had no official or administrative relationship with them. It is questionable whether an administrator or a supervisor could secure data of this type and use it effectively *until* administrator-teacher relationships are modified.

Departmental meetings were employed to discuss points of common interest. Data were obtained from the purposes blank concerning the frequency of, student liking of, and student-teacher similarity of purpose for each of nine class activities; namely examinations and tests; oral reports; written reports; group projects and committee work; research work in the laboratory and library; lectures; motion pictures; excursions and trips; and class discussions. See Table 3. In this table it will be noted that group projects and committee work were infrequently practiced. But a major objective of all teachers was to develop cooperative abilities and attitudes. In meeting with the teachers it was concluded that students should be given more of such experiences. This became a goal for improvement during the next year. Examinations and tests were the most disliked of all class activities and also one of the types of activities for which there was the greatest student-teacher dissimilarity of purpose. They were practiced rather frequently too. The teachers concluded that this was a source of friction and a point of needed improvement and agreed that they would each work on the problem in class. Reference to the table also revealed to the teachers that the least frequently practiced of class activities was "excursions and trips," but that students liked such activity very much and had purposes

TABLE III

FREQUENCY OF, STUDENT LIKING OF, AND TEACHER–STUDENT CONFLICT OF PURPOSES IN NINE CLASSES AND THE ACTIVITIES THEREIN

| Activity | Teacher-student conflict of purposes* | | Frequency with which Activity Occurred** | | Student Liking for the Activity*** | |
|---|---|---|---|---|---|---|
| | Average Score | Rank | Average Score | Rank | Average Score | Rank |
| Examinations and Tests | 10. 14 | 6 | 2. 6 | 5 | 2. 61 | 9 |
| Oral Reports | 10. 06 | 5 | 2. 38 | 6 | 3. 58 | 4 |
| Written Reports | 10. 17 | 8 | 2. 8 | 4 | 3. 27 | 7 |
| Group Projects | 10. 27 | 9 | 2. 02 | 8 | 3. 04 | 8 |
| Research Library and Laboratory | 9. 38 | 3 | 3. 55 | 3 | 3. 42 | 6 |
| Lectures | 10. 15 | 7 | 3. 98 | 2 | 3. 54 | 5 |
| Motion Pictures | 8. 21 | 2 | 2. 35 | 7 | 4. 3 | 1 |
| Excursions and Trips | 7. 32 | 1 | 1. 71 | 9 | 4. 29 | 2 |
| Class Discussion | 9. 99 | 4 | 4. 24 | 1 | 3. 95 | 3 |

* The scores ranged from 1 to 23, the highest possible being near 30. The higher the score, the greater the conflict of purpose. (Rank 1 = most similar purpose)

** The rating scale used was as follows:
1 = About once a semester.
2 = About once every 6 weeks.
3 = About once a month.
4 = About once a week.
5 = Constantly, several times a week.
(Rank 1 = most frequently)

*** The rating scale used was as follows:
1 = I have a strong dislike.
2 = I like them less than most things in the course.
3 = I like them about as well as most things in the course.
4 = I like them more than most things in the course.
5 = I like them extremely well.
(Rank 1 = Most liked activity)

similar to those of the teacher when so engaged. The table shows that the relationship between student-teacher similarity of purpose and student liking of an activity is very high.

## CONCLUDING STATEMENT

The study here reported is of an exploratory sort; the conclusions are tentative only. It has been the writer's hope to assist in the definition of a field the importance of which educators have again and again stressed but which as yet has been only poorly defined. The study underlines the fact that education, and particularly teaching, is a complex process and that probably no one factor or element is crucial in all cases, but rather it is the pattern of the student-teacher relationship that is important and which must be discerned if an adequate diagnosis is to be accomplished.

# A STUDY OF PUPIL-TEACHER RELATIONSHIP

STUART C. TIEDEMAN
*Madison Public Schools*

*Editor's note:* The attitude of pupils toward the teacher is an important factor in learning. The author presents data of pupil likes and dislikes in this respect.

## INTRODUCTION

THE relationships between pupils and teachers, both in and out of the classroom, have often been emphasized as important factors in motivation. If pupils and teachers work in harmony, with a mutual feeling of understanding and cooperation, a friendly atmosphere will result which is conducive to effective learning. Teachers that are aloof, unfriendly, and otherwise irritate and antagonize their pupils, destroy interests and incentives for learning and promote, instead, resentment, unwholesome attitudes and personality disorders. To determine which teacher techniques, personality traits and behaviorisms most generally effect either a cooperative, friendly pupil-teacher relationship or an antagonistic unwholesome relationship this study was undertaken.

## SIGNIFICANT STATEMENTS AND OPINIONS CONCERNING THE PROBLEM

Prescott,[1] in a recent statement, says that "the personal relationships which a child experiences at school educate him just as genuinely and importantly as what he reads, sees, hears, or otherwise experiences." Ojeman and Wilkinson[2] believe that "knowing the child's attitudes, conflicts, and purposes should make the teacher a better guide in planning an effective program of work for him." The Committee on Workshops, Progressive Education Association,[3] says: "We are anxious to have teachers who understand children and who are able to establish relations with them that are reassuring and helpful in meeting day by day problems of living." Stevenson[4]

[1] Prescott, D. A. *Emotion and the Educative Process.* Washington, D. C.: Committee on the Relation of Emotion to the Educative Process, American Council on Education, 1938. Pp. 290.

[2] Ojeman, R. H. and Wilkinson, F. R.: "The Effect on Pupil Growth of an Increase in Teacher's Understanding of Pupil Behavior," *Journal of Experimental Education,* VIII (December, 1939), 143.

[3] Meek, Lois Hayden. *The Personal-Social Development of Boys and Girls.* Washington, D. C.: Committee on Immediate Social Relations of Adolescents, Progressive Education Association, 1940. Pp. 83–84.

[4] Stevenson, George S. "Psychiatric Implications of the High School," *American Journal of Psychiatry,* XCII (January, 1936), 845.

says that the modern educator speaks of education to-day as centering about the dynamics of pupil-teacher relationships. Ryan[5] feels it to be unfortunate that so "little attention has been paid to the selection of young men and young women for teacher preparation in terms of a wholesome personality." Previous studies, cited by Ryan, show that pupils tend to develop the traits displayed by their teachers. Torgerson[6] sums up the factors involved in pupil-teacher relationships and the importance of such relationships as follows:

"The fundamental importance of teacher-pupil relationship is self-evident, because it is essential to the promotion of optimum conditions for learning. Certain attitudes, traits, and procedures are undoubtedly necessary to establish teacher behavior patterns that contribute to wholesome relationships in the classroom. A study of the integration of the teacher's attitudes, traits, and practices necessary to create and maintain such an environment is a challenging problem that may throw considerable light on the problem of measuring teaching success."

## REVIEW OF THE LITERATURE

A survey of the literature reveals the fact that there have been comparatively few studies made of how pupils feel about their teachers.

Remmers[7] and Flinn[8] conducted investigations to determine whether or not the judgments of pupils regarding their teachers were reliable and valid. Both investigators conclude that pupil ratings of teachers are reliable and valid.

Hart,[9] Schaffle,[10] Davies,[11] and Light[12] obtained from pupils lists of teacher traits which the pupils liked and disliked.

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[5] Ryan, Carson W. *Mental Health Through Education*. New York: The Commonwealth Fund, 1938. P. 23.

[6] Torgerson, T. L. "The Measurement and Prediction of Teaching Ability," *Review of Educational Research*, VII (June, 1937), 246.

[7] Remmers, H. H. "Reliability and Halo Effect of High School and College Students' Judgments of Their Teachers," *Journal of Applied Psychology*, XVIII (October, 1934), 619–630.

[8] Flinn, V. F. "Teacher Rating by Pupils," *Educational Methods*, XI (February, 1932), 290–294.

[9] Hart, F. W. *Teachers and Teaching by 10,000 High School Seniors*. New York: Macmillan Co., 1934. Pp. 285.

[10] Schaffle, A. E. F. "Pupil Checks the Teacher," *School Executive Magazine*, LI (December, 1931), 151–153.

[11] Davies, J. E. "What are the Traits of the Good Teacher from the Standpoint of Junior High School Pupils," *School and Society*, XXXVIII (November, 1933), 649–652.

[12] Light, U. L. "High School Pupils Rate Teachers," *School Review*, XXXVIII (January, 1930), 28–32.

In a recent study by Jersild,[18] an effort was made "to ascertain some of the qualities that characterize teachers who are liked or disliked by their pupils." The information on which the study was based "was variously obtained by means of written reports, compositions, personal interviews, and, in a limited number of cases, by means of records of children's conversation with their parents or with each other." Jersild classified the responses according to the following six categories: I. Human Qualities as a Person, II. Physical Appearance, Grooming, Voice, III. Characteristics as Disciplinarian or Director of Class, IV. Participation in Children's Interests, Entertainments, etc., V. Performance as a Teacher, Teaching, VI. Miscellaneous and General.

The items from Jersild's categories have been reclassified and placed in the categories selected by the writer, as will be discussed later in this article. That the results obtained by all these investigators, as well as those obtained by the writer, are in fairly close agreement will also be shown in a later part of this paper.

## PURPOSE OF THIS STUDY

The purpose of this study is threefold. First, to learn from the pupils in the seventh, eighth, and ninth grades of junior high school which traits, characteristics, habits, and practices of their teachers they (1) disliked greatly, and (2) which they liked very much. Second, to find out whether, as pupils grow older and move from grade to grade, certain types of teacher behavior become more, or less, displeasing to them. Third, to find to what extent the results of current investigations agree as to the specific pupil likes and dislikes.

## PROCEDURE

The data for the first part of this study were obtained from 450 seventh, eighth, and ninth grade junior high school pupils. Each pupil was given a blank sheet of paper and asked to write, in his own words, a list of all the things any teacher—from first grade up to the present—had ever done that he disliked greatly, and then to make a similar list of things he had liked particularly well.

In this way a total of almost 8,000 pupil opinions about teachers were obtained, an average of about 7 "likes" and 10 "dislikes" per pupil. These

[18] Jersild, Arthur T. "Characteristics of Teachers who are 'Liked Best' and 'Disliked Most,'" *Journal of Experimental Education*, IX (December, 1940), 139–151.

8,000 individual opinions, or items, were tabulated according to frequency of mention. The "dislike" items were then grouped and classified under the following categories:

1. Characteristics of the teacher who ridicules, uses sarcasm, nags.
2. Characteristics of the teacher who threatens, frightens and punishes to secure discipline.
3. Characteristics of the teacher who is autocratic (domineering).
4. Characteristics of the teacher who shows partiality toward pupils.
5. Characteristics of the teacher who fails to provide for individual differences of pupils.
6. Characteristics of the teacher who has disagreeable personal peculiarities.

A tabulation was made of the number of "dislikes" occurring in each category for each grade. The categories were then ranked from one to six on the basis of frequency, group one containing the largest number of items. A ranking of the categories on the basis of frequency for the combined grades was made in the same way.

In order to determine the consistency of pupil opinions the results of this study were compared with five similar representative studies. The studies selected were those which contained lists similar to the writers, i. e., lists of liked and disliked teacher traits and practices obtained directly from pupils. The items from all of these lists were combined to form a composite table. All the items from each investigator's list were arranged in the six categories previously mentioned. Each item was ranked according to its frequency of occurrence in the particular study in which it was found.

## RESULTS AND CONCLUSIONS

A tabulation of pupil opinions, obtained in the first part of this study, is presented in Table I.

From the data here presented it is obvious that the autocratic, domineering teacher is most disliked by junior high school pupils, followed, in order, by (2) the teacher who ridicules, uses sarcasm, nags; (3) the teacher who threatens, frightens, and punishes to secure discipline; (4) the teacher who fails to provide for individual differences of pupils; (5) the teacher who has disagreeable personal peculiarities; and (6) the teacher who shows partiality to pupils.

The domineering teacher is liked least by ninth grade pupils, while eighth graders and seventh graders are slightly less disturbed by this type

TABLE I

| Type of Teacher Characteristics | Category | Grade 7 | | Grade 8 | | Grade 9 | | Total of Ranks for 7–8–9 grades | Composite Ranking for Grades 7–8–9 |
|---|---|---|---|---|---|---|---|---|---|
| | | Frequency | Rank | Frequency | Rank | Frequency | Rank | | |
| Characteristics of the Teacher who is Autocratic | V | 57 | 2 | 48 | 2 | 111 | 1 | 5 | 1 |
| Characteristics of the Teacher who Ridicules, uses Sarcasm and Nags | I | 35 | 3 | 52 | 1 | 97 | 2 | 6 | 2 |
| Characteristics of the Teacher who Threatens, Frightens, and Punishes to Secure Discipline | III | 74 | 1 | 28 | 4 | 77 | 4 | 9 | 3 |
| Characteristics of the Teacher who Fails to Provide for Individual Differences of Pupils | II | 19 | 5.5 | 41 | 3 | 73 | 5 | 13.5 | 4.5 |
| Characteristics of the Teacher who has disagreeable Personal Peculiarities | VI | 19 | 5.5 | 24 | 5 | 78 | 3 | 13.5 | 4.5 |
| Characteristics of the Teacher who shows Partiality toward Pupils | IV | 32 | 4 | 23 | 6 | 56 | 6 | 16 | 6 |

of teacher. The seventh graders apparently have the greatest dislike for a teacher who punishes, frightens, or threatens them to secure discipline, while the eighth graders are most hostile toward a teacher who ridicules, nags them or is sarcastic.

On the whole, pupils are most disturbed by aggressive or overt behavior, such as domination, ridicule, and punishment, and less disturbed by the more passive or subtle forms of teacher behavior, such as failure to provide for individual differences, personal peculiarities, and partiality.

Data relative to the groups of characteristics that pupils dislike and like to find in teachers are presented in the following lists.

### ACTS AND CHARACTERISTICS OF TEACHERS THAT PUPILS DISLIKE

Some of the most frequently mentioned acts and characteristics disliked by pupils of seventh, eighth, and ninth grades follow. (Roman numerals refer to categories in above table.)

#### 1. *Characteristics of the Teacher Who is Autocratic (Domineering). V*

1. Teacher talks so much we can't do anything.
2. Teacher never lets us talk or whisper.
3. Teacher is "bossy," acts like a "big shot," acts like she's the "whole cheese."
4. Teacher is too strict.
5. Teacher is unreasonable.

#### 2. *Characteristics of the Teacher Who Ridicules, Uses Sarcasm and Nags. I*

1. Teacher is crabby, cross, scolds, and has bad temper.
2. Teacher embarrasses children.
3. Teacher nags and "preaches" to us all the time.
4. Teacher is sarcastic and mean.
5. Teacher picks on pupils all the time.
6. Teacher makes a pupil stand in front of the class and makes a spectacle of him.

#### 3. *Characteristics of the Teacher Who Threatens, Frightens, and Punishes to Secure Discipline. III*

1. Teacher hits "kids" and shakes them up.
2. Teacher keeps pupils after school.
3. Teacher sends pupils to the office.

4. Teacher gives low marks for punishment.
5. Teacher screams at us or talks harsh to us.
6. Teacher makes us make up too much time for being late.
7. Teacher talks so harsh she scares me.
8. Teacher made us scared of her.
9. Teacher uses too severe punishment.
10. Teacher makes you write something 100 or 1000 times.
11. Teacher threatens us all the time.

4.5 *Characteristics of the Teacher Who Fails to Provide for Individual Differences of Pupils. II*

1. Teacher gives too much home work.
2. Teacher doesn't explain clearly.
3. Teacher doesn't give help with work.
4. Teacher doesn't give enough time for important work.
5. Teacher expects too much.
6. Teacher makes work too hard.
7. Teacher gives too many tests.
8. Teacher piles on too much work.

4.5 *Characteristics of the Teacher Who Has Disagreeable Personal Peculiarities. VI*

1. Teacher is too old and doesn't understand our problems.
2. Teacher always talks about herself or her relatives.
3. Teacher wears old, queer clothes.
4. Teacher has no sense of humor—never friendly or cheerful.
5. Teacher isn't neat—sloppy and untidy.
6. Teacher tells "awful" jokes.
7. Teacher is nervous and irritable.
8. Teacher wears same clothes every day.
9. Teacher never compliments or encourages one.
10. Teacher goes frantic at every little noise.

6. *Characteristics of the Teacher Who Shows Partiality Toward Pupils. IV*

1. Teacher has "pets"—is partial.
2. Teacher marks too low.
3. Teacher picks on certain people.
4. Teacher accuses some people of something they didn't do.
5. Teacher is unfair.
6. Teacher doesn't like boys (or girls).
7. Teacher doesn't pay any attention to some pupils.
8. Teacher always "sticks up" for smaller children.

### WHAT PUPILS LIKE IN TEACHERS

Some of the most frequently mentioned acts and characteristics liked by pupils follow:

1. Teacher has a kind, friendly, cheerful disposition.
2. Teacher is glad to help children.
3. Teacher explains clearly.
4. Teacher has no pets—is fair to everyone.
5. Teacher is neat and tidy in dress and in taking care of the room.
6. Teacher has a sense of humor.
7. Teacher understands children and their problems.
8. Teacher allows children to do things for her.
9. Teacher is friendly and polite on the street or out of school.

In general, the best liked teacher may be described as kind, friendly, and cheerful; has a sense of humor; does not nag, ridicule, or speak sarcastically to pupils; does not threaten or punish so severely as to cause the pupils to fear her; is always willing to help pupils when they are in need of help; does not impose her will arbitrarily on the pupils; is not "bossy" or domineering; is fair to all pupils, and gives them all opportunities to help her with various tasks; is modern and neat in dress, and neat in room management; has a clear, pleasant voice; understands children and their problems; realizes that all children are not alike, but must be recognized as individuals; allows sufficient freedom in the classroom while maintaining adequate discipline and respect from all pupils.

From incidental remarks written on the papers of some pupils, the writer found that pupils are willing to "put up" with a considerable amount of "bad" teacher behavior if she is cheerful, friendly, and kind.

The results secured in this study are in reasonable agreement with those of other investigators in this area. It seems logical to conclude, therefore, that pupils are fairly consistent and reliable in their judgments of teacher characteristics as far as their personal likes and dislikes are concerned.* It seems fair, also, to conclude that a particular teacher behaviorism or characteristic which is distasteful to one pupil is very apt to be distasteful also to most other pupils.

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* *Note:* Objective tests are now being constructed by the writer to measure the extent of desirable or undesirable teacher–pupil relationship from the point of view of pupils, teachers and supervisors.

# STUDIES IN THE SELECTION OF STUDENTS FOR A TEACHERS COLLEGE*

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*Editor's note:* Much attention has been given in recent years to the pre-training selection of teachers as a means of securing professional competency. The authors present data on the predictive value of certain non-academic measures.

## INTRODUCTION

NUMEROUS studies have shown the relationships between college grades and data on high school scholarship, interests, intelligence, and other factors available at the time of entrance into college.[1] Other investigations have similarly shown there is some relation between all of these factors and teaching success.[2,3] In the case of scholastic or intellectual factors, however, the relationship found is usually not sufficiently high to warrant selection of students for teaching on this basis alone. There are too many instances where brilliant students with superior scholarship do not become effective teachers. Hence, it is generally agreed that personality is probably as important for teaching success as are the factors of intelligence and scholarship. But it is proving very difficult to successfully select students for teacher training on the basis of personality. Not only is there little agreement as to the personal qualities essential for teaching effectiveness, but also it is almost impossible to get an adequate measure of those qualities agreed upon.

After summarizing recent literature on selection and on the prediction of teaching success Barr[4] concludes as follows:

1. There is widespread interest in the selection, guidance, and recruitment of teachers. Many institutions have already put into effect plans for this purpose.

* Assistance in the preparation of these materials was furnished by the personnel of the Works Project Administration, official project #165–32–3–2385.

[1] Harris, D. "Factors Affecting College Grades: A Review of the Literature, 1930–1937," *Psychological Bulletin,* XXXVII (1940), 125–166.

[2] Yaukey, J. V., and Anderson, P. L. "A Review of the Literature on the Factors Conditioning Teaching Success," *Educational Administration and Supervision,* XIX (October, 1933), 511–520.

[3] Barr, A. S. "Recruitment for Teacher Training and Prediction of Teaching Success," *Review of Educational Research,* X (June, 1940), 185–190.

[4] *Op. cit.,* p. 190.

2. There is a tendency to use more objective means in the selection, guidance, and recruitment of teachers.
3. There is need for more objective studies of the validity and reliability of the various measures considered to have predictive value in the selection of prospective teachers in terms of more adequate criteria of teaching efficiency.
4. The results to date are, on the whole, disappointing as far as any scientific validation of pre-training selection, guidance, and recruitment practices are concerned.
5. Much more and much better research is needed in this field, particularly long-time studies and studies wherein the validity and reliability of the proposed criteria may be studied under comparable conditions.

Thus the finding of methods by which students may be selected for teaching during their senior year in high school on the basis of personality as well as on the basis of such factors as scholastic aptitude is a problem which confronts many schools of education today.

There are in general two views on the problem of selection. One may feel that selection of students is a minor matter and that most students with proper training and guidance can develop into adequate teachers. This view places the emphasis upon a program of adequate education, training, and guidance rather than upon selection. The other view assumes that personality is fairly well developed by the time a student enters college and that the college can do no more than develop those potentialities which are present. Which of these viewpoints is reflected in a program of teacher education depends in part upon the functions other than teacher-training carried out by the institution involved. In a college where the training of teachers is not the primary function the former viewpoint usually prevails. In such an institution it is a relatively simple matter to shift students not succeeding in the teacher training course to some other course of study, providing an adequate guidance program is maintained. On the other hand, such a procedure could not well be carried out in a teacher-training institution when no other course of study is available for those who do not succeed.

It is the opinion of the writers that although a college education with an adequate guidance program can do something toward the development of a teacher's personality, it cannot do the whole job. In the first place, college courses as given today do not aid much in the development of a teaching personality. Secondly, a guidance program, no matter how well

organized, can be of only limited effectiveness. College counselors are unable to control the numerous environmental factors which alter personality such as the attitudes of parents and grand-parents, the security and economic condition of the home, and the impact of economic and social forces of the community and its ideals. Hence, the authors believe it is necessary to place considerable emphasis upon the early selection of students for teacher-training, not only on the basis of scholarship, but also on the basis of potentialities for personality development. With material thus selected a teachers college can then apply its limited budget and devote its energies to the development of those students whose potentiality for success in teaching is greatest.

## THE USE OF THE BERNREUTER INVENTORY IN THE SELECTION OF STUDENTS

The general factors used in selection of Freshmen at the Milwaukee State Teachers College are intelligence and scholarship. These are secured from the scores on the Henmon–Nelson Intelligence Test and the rank of the student in his high-school graduating class. Although there is a positive relationship between a combination of these scores and college grades, they are of little value in selecting students with adequate personalities.

In an attempt, therefore, to find some factor in personality which is more closely related to teaching success, the entire freshman class at the Teachers College was given the Bernreuter Personality Inventory, one of the most widely used personality tests. Four years later when the surviving students were completing their practice teaching, they were rated by their supervisors and by their critic teachers on a five point scale utilizing the following characteristics: interest in work; daily preparation; evidence of growth; relationship with pupils; attitude toward suggestions and criticisms; industry, reliability, and loyalty; ability to cooperate with school officials, co-workers, and parents; ability to apply modern methods; adaptability; appearance; health; judgment in social matters; and ability to make herself felt in the community. A composite score was then computed including the ratings on all of these characteristics.

Table I shows the correlations between the raw scores on the six scales of the Bernreuter Inventory and the supervisors' and critic teachers' ratings. It will be noted that there is practically no relationship between the ratings of supervisors and critic teachers and the scores on the Bernreuter Inven-

TABLE I

CORRELATION OF RAW SCORES ON BERNREUTER INVENTORY AND RATINGS OF SUPERVISORS AND CRITIC TEACHERS DURING PRACTICE TEACHING (95 CASES)

| | Neurotic Tendency B1-N | Self-Sufficiency B2-S | Introversion Extroversion B3-I | Dominance Submission B4-D | Self-Confidence F1-C | Sociability F2-S |
|---|---|---|---|---|---|---|
| Supervisors' Ratings | —.11 | —.24 | —.08 | .04 | .02 | —.11 |
| Critic Teachers' Rating | .09 | —.23 | .01 | .00 | .08 | —.11 |

tory. The Self-Sufficiency score (B2–S) on the Bernreuter, however, does show a correlation of —.24 and —.23 with the ratings of the supervisors and critic teachers. This might indicate some relationship between the degree of dependency and higher ratings. It appears that those students who frequently seek advice and encouragement (e. g. who are dependent) are rated more highly than those who are self-sufficient. These correlations with a P.E. of .07 are not very significant since the correlations are not over four times their probable error.

There is a possibility that students who had low personality scores failed during their first years in college, and that only those with high grades and a stable personality survived. To investigate this possibility a comparison was made between the Bernreuter Personality scores of students who failed in college and the Bernreuter personality scores of a control group (having similar intelligence scores and high school grades) of students who succeeded. These comparisons of the means and probable errors of the two groups are shown in Table II.

The control group for these comparisons was chosen on the basis of the Henmon–Nelson formula for predicting success in college.[5] These predictions represent a combination of a student's relative standings in intelligence and high school achievement. Table II shows that the differences between the average Bernreuter scores for the two groups are negligible in all cases except for the comparison between the girls who failed and the control group, on the F2–S scale (Sociability). Since even this difference

[5] Henmon, V. A. C., and Holt, F. D. *A Report on the Administration of Scholastic Aptitude Tests of 34,000 High School Seniors in Wisconsin in 1929–1930.* Bulletin of the University of Wisconsin. Madison, Wisconsin: University of Wisconsin, 1931. Pp. 59–60.

TABLE II

A COMPARISON OF SCORES ON THE BERNREUTER INVENTORY OF STUDENTS WHO FAILED AND STUDENTS OF SIMILAR ABILITY WHO SUCCEEDED IN COLLEGE

| | No. of Cases | Predicted Grade Point Average | Earned Grade Point Average | Bernreuter Personality Inventory Scores | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | B1-N | B2-S | B3-I | B4-D | F1-C | F2-S |
| Boys Who Failed | 76 | 1.21 ± .04 | 0.78 ± .02 | —71 ± 5 | 31 ± 3 | —43 ± 3 | 52 ± 5 | —42 ± 6 | —29 ± 5 |
| Control Boys | 76 | 1.21 ± .04 | 1.75 ± .02 | —78 ± 6 | 34 ± 3 | —44 ± 3 | 53 ± 5 | —48 ± 6 | —25 ± 4 |
| Girls Who Failed | 99 | 1.31 ± .03 | 0.78 ± .02 | —44 ± 5 | 6 ± 4 | —25 ± 3 | 30 ± 4 | —10 ± 6 | —39 ± 4 |
| Control Girls | 99 | 1.31 ± .03 | 1.63 ± .01 | —42 ± 5 | 9 ± 4 | —25 ± 3 | 25 ± 4 | 3 ± 6 | —27 ± 4 |

is less than three times its probable error, we are justified in concluding that in general there is little relation between the score on the Bernreuter Personality Inventory and success in college. We can further conclude that the failure to find a relation between the Bernreuter scores and success in practice teaching is not to be explained by assuming that students with adverse personality characteristics as shown by the Bernreuter Personality Test scores had already failed and dropped out of college before that time.

It might be felt by many that the rating blank used by supervisors and critic teachers does not give a valid measure of teaching success. The writers agree, of course, that such ratings are of doubtful validity. A slightly different measure is the college grade obtained by the student in practice teaching. Although this, too, is open to objection, it has been shown in at least one study to predict the degree of success on the job more closely than any other factor.[6] Hence comparisons were also made in the present study between the scores on the Bernreuter and practice teaching grade. Correlations between the six scales on the Bernreuter (taken as freshmen) and practice teaching grade obtained in the senior year were calculated for 208 students. The correlations were all near zero, the largest being + .15 between BN 4 (dominance-submission) and practice teaching grade. This is very similar to what was found in Table I which presented the correlations between supervisors and critic teachers ratings and the scores on the Bernreuter scale.

From the results, it would appear that the Bernreuter Inventory is not a very valuable instrument for selecting students for teaching. The authors have given other personality tests such as "The Inventory of Activities and Interests" by Link et al, "The Bell Adjustment Inventory," and "The Clark–Thurstone Personality Schedule" to students at the Milwaukee State Teachers College. These tests, although of value to counselors, have not seemed to differentiate any better than the Bernreuter Inventory between prospective good and poor teachers. Hence a detailed analysis of the relation between scores on these tests and ratings and practice teaching grades will not be presented here.

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[6] Sandiford, Peter, and others. *Forecasting Teaching Ability*. Bulletin No. 8. Toronto, Ontario: Department of Research, University of Toronto, 1937. Pp. 93.

## THE USE OF A RATING OF GENERAL BEHAVIOR BY HIGH SCHOOL PRINCIPALS IN THE SELECTION OF STUDENTS

Another practical way to obtain information on personal characteristics of students is by means of rating scales. The high school application blank of students entering the Milwaukee State Teachers College contains ten-point-scale ratings by one high school teacher or principal on the following characteristics: appearance and manner; independence in work habits; influence over others; emotional control; and plan and purpose. Correlations were obtained between each of these characteristics and practice teaching grades for 208 students. These correlations are shown in Table III.

TABLE III

CORRELATIONS OF HIGH SCHOOL RATINGS WITH PRACTICE TEACHING AND GENERAL COLLEGE GRADES

| | Practice Teaching Grades | College Grades |
|---|---|---|
| Appearance and Manner | +.27 | .05 |
| Independence in Work Habits | +.18 | .24 |
| Influence Over Others | +.28 | .14 |
| Emotional Control | +.24 | .16 |
| Plan and Purpose | +.14 | .24 |

The rated characteristics given in Table III all show a positive though low correlation with practice teaching and college grades. It should be noted, moreover, that these correlations are consistently higher than those obtained from the Bernreuter Inventory (Table I). Although these correlations are too low for such ratings to be a valid means of selection of individual freshmen for a teachers college, it would appear that this approach offers greater possibilities than does the use of personality tests.

It is also interesting to note in this connection that the correlations of high school ratings with practice teaching grades are different from those with general college grades. For example, on Appearance and Manner the correlation of high school rating with practice teaching grade is relatively high (+.27). On the other hand, that with college grades is relatively low (+.05). It would be expected that such a relationship would be found since appearance and manner should not influence general scholastic success,

but should have some influence on classroom effectiveness. Similarly Influence over Others shows a relatively high correlation with practice teaching grade (+.28), and a lower correlation with general college grades (+.14). The same relationship is true for Emotional Control. On the other hand, such characteristics as Independence in Work Habits and Plan and Purpose show a higher relationship with college grades (+.24 and +.24) than with practice teaching grades (+.18 and +.14). One would expect just such results since Independence in Work Habits and Plan and Purpose are more related to scholastic activities than to such an activity as practice teaching.

## SUMMARY AND CONCLUSIONS

In an attempt to discover factors other than intellectual ones which may have a bearing on teaching success studies were made of the relationship between scores on a personality test and practice-teaching ratings and grades, and also between the latter and ratings of personal characteristics by high school teachers. The following suggestions and conclusions may be made:

1. Teachers Colleges should select students possessing potentially desirable personalities in addition to intellectual ability.

2. The Bernreuter Personality Inventory given to freshmen showed practically no relationship to later practice teaching grades, or to more extensive ratings on numerous personal characteristics by supervisors and critic teachers.

3. Ratings by high school teachers and principals on some personality characteristics showed a greater relationship with practice teaching grade than did scores on the Bernreuter Inventory.

4. The results indicate that further research and study on factors other than intellectual ones might better proceed along the lines of ratings on personality reactions observed in high school. A refinement of this technique would be an invaluable aid in selecting freshmen for a Teachers College.

# SOME ORIGINS OF INTEREST IN TEACHING

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*Editor's note:* Motivation is without doubt one of the very important factors in teaching efficiency. The author presents data on the attitudes and experiences of students that would differentiate those who want to teach from those who do not.

PROGNOSIS of success in teaching is based upon a pattern of abilities, combined with positive motivation. Research has given the ability factor the preponderant emphasis, and its importance is undoubtedly great. Yet there are many people who have the intelligence, the academic background, and the personal qualifications for teaching who are indifferent or negative to that vocation. An analysis of origins of interest in teaching may provide data which may serve as the basis for testing the presence of motivation in this field, or for developing such motivation in persons of ability at the pre-college level.

## PROBLEM

The present investigation was designed to discover experiences, attitudes, and personal relationships which reliably differentiate upper division college students interested in teaching from students of equivalent status who do not wish to teach.

## SUBJECTS

The subjects were 122 students enrolled in a course, Conditions of Learning, required of students taking the general elementary credential, and 122 equivalent controls. There were twenty men and 102 women in each of the two groups.

Equivalence of teaching and control groups was obtained on several variables. Equivalent sex was obtained through the instruction given, described under Procedure. Stated grade point ratios were summarized with a mean for the teaching group of $1.61 \pm 0.40$ and for the control group of $1.60 \pm 0.43$, a statistically negligible difference. The two groups were equivalent in class and in economic and cultural background, as indicated by Table I. In using the student's own statement of grade point ratio and his estimate of economic and cultural background it was assumed that, although absolute ratings might show a constant error because of a tendency

TABLE I

CONTROL FACTORS

| Item | Frequency | | Percent | | D | $\sigma_{Dp}$ | Ratio | Probability |
|---|---|---|---|---|---|---|---|---|
| | T | C | T | C | | | | |
| $C_1$ If you had plenty of money and could choose any occupation you wished where would teaching rank? | | | | | | | | |
| 1st | 46 | 4 | 37.7 | 3.3 | T34.4 | 4.5 | T 8.0 | T100 |
| 2nd | 54 | 17 | 44.3 | 13.9 | T30.4 | 5.5 | T 5.5 | T100 |
| 3rd | 14 | 27 | 11.5 | 22.1 | C10.6 | 4.7 | C 2.3 | C 99 |
| 4th | 3 | 19 | 2.4 | 15.6 | C13.2 | 3.6 | C 3.7 | C100 |
| 5th or below | 5 | 55 | 4.1 | 45.1 | C41.0 | 4.9 | C 8.4 | C100 |
| $C_3$ How would you group your family economically | | | | | | | | |
| a) In need of aid | 2 | 2 | 1.6 | 1.6 | 0.0 | | 0.0 | |
| b) Hardly enough for necessities | 4 | 2 | 3.3 | 1.6 | T 1.7 | 2.0 | T 0.9 | T 82 |
| c) Enough for necessities | 22 | 24 | 18.0 | 19.7 | C 1.7 | 5.0 | C 0.3 | C 62 |
| d) Enough for a few luxuries | 92 | 89 | 75.5 | 73.0 | T 2.5 | 5.6 | C 0.4 | C 65 |
| e) Plenty of money | 2 | 5 | 1.6 | 4.1 | C 2.5 | 2.1 | C 1.2 | C 88 |
| $C_6$ How would you group your family culturally | | | | | | | | |
| a) No intellectual interests | 1 | 1 | 0.8 | 0.8 | 0.0 | | 0.0 | |
| b) Few intellectual interests | 4 | 6 | 3.3 | 4.9 | C 1.6 | 2.5 | C 0.6 | C 73 |
| c) Normal intellectual interests | 53 | 57 | 43.4 | 46.7 | C 3.3 | 6.4 | C 0.5 | C 69 |
| d) Some intellectual interests | 33 | 28 | 27.1 | 23.0 | T 4.1 | 5.5 | T 0.7 | T 76 |
| e) Keen intellectual interests | 31 | 30 | 25.4 | 24.6 | T 0.8 | 5.5 | T 0.1 | T 54 |
| $D_2$ What is your standing | | | | | | | | |
| Junior | 62 | 56 | 50.8 | 45.9 | T 4.9 | 6.4 | T 0.8 | T 79 |
| Senior | 42 | 56 | 34.4 | 45.9 | C11.5 | 6.2 | C 1.8 | C 96 |
| Graduate | 13 | 7 | 10.7 | 5.7 | T 5.0 | 3.5 | T 1.4 | T 92 |
| Unclassified | 5 | 3 | 4.1 | 2.5 | T 1.6 | 2.3 | T 0.7 | T 76 |

to claim superiority, both groups would be affected to the same degree and differences between groups would be valid.

That the teaching group differed from the control is shown in the ranking of teaching in Table I. The teaching group assigned a much greater number of first and second ranks, while the control group assigned ranks of fourth and below more often. The ratio of the difference between percents to the standard error of the difference was 8.0 in favor of the teaching group for first rank, and 8.4 in favor of the control group for fifth and below.

Additional evidence of difference in motivation is found in college course. All of the teacher group and none of the controls were taking teaching credentials. Of the teaching group, sixty-eight were taking the general elementary credential, thirty the general secondary, twenty-five the kindergarten-primary, four the junior college, two the special secondary, and one the general junior high school. In some cases more than one credential was the objective.

Of the teaching group, forty-nine were majoring in education, twenty in history, fourteen in English, twelve in psychology, and seven in music, with the remaining cases distributed among thirteen departments with no frequency greater than three. Of the control group, nineteen were majoring in English, seventeen in History, twelve in Psychology, eight in Political Science and six in Sociology, with the remainder distributed among twenty-eight departments with no frequency greater than five.

Asked to state the vocational objective, one hundred nine of the teaching group mentioned teaching, with other objectives distributed among twenty related vocations with frequencies ranging from one to four. In the control group, ten planned to become librarians, nine social workers, seven housewives, seven secretaries, six writers, five to enter business, and the remainder to enter thirty-eight different vocations with frequencies of four or less.

It seems reasonable to believe, then, that the groups were equivalent in sex, class, academic ability, economic and cultural background. They differed reliably in motivation for teaching.

## PROCEDURE

In a preliminary study each student in Conditions of Learning was asked to analyze subjectively the origin of his or her interest in teaching.

The questionnaire included in this report was derived from the factors suggested.

Duplicate questionnaires, of differing color for the teaching and control groups, with corresponding numbering to preserve the identity of the pairs, were used.

### QUESTIONNAIRE

A study of factors leading to the development of interest in teaching is being undertaken. The purpose is to find out how a student may best test his interest in teaching before undertaking training.

Will you please answer the following questions as carefully as possible? Try to fill in each blank. Then send your answer to E. B. 214, campus. *Do not sign your name. Please be frank: You cannot be identified in any way.*

A. Have you ever—

1. Cared for younger children in your family? _____ _____
2. Cared for children outside your immediate family? _____ _____
3. Played school? _____ _____
4. Read stories to children? _____ _____
5. Taken charge of a class when the teacher was absent? _____ _____
6. Taken charge of your own class as a class officer? _____ _____
7. Worked in the school office? _____ _____
8. Tutored or coached a student in a subject? _____ _____
9. Given music lessons? _____ _____
10. Taught a Sunday school class? _____ _____
11. Acted as counselor in a summer camp? _____ _____
12. Worked in a neighborhood settlement house? _____ _____
13. Sponsored a Scout or Campfire group? _____ _____
14. Worked on a playground? _____ _____
15. Done practice teaching? _____ _____
16. Taught a regular classroom? _____ _____

B. After each "Yes" in Section A, write "L" if you liked doing it, "D" if you disliked it, "?" if you neither liked nor disliked the experience.

C. 1. If you had plenty of money and could choose any occupation you wished, where would teaching rank?
First Second Third Fourth Below Fourth

2. What persons have advised you that you would make a good teacher?
No one Family Teacher Counselor Friends

3. What relatives and friends have been teachers?
None Mother or father Brother or sister Other relatives Close friends

4. Have you ever wished to be just like some particular teacher?
Never In elementary school In junior high In senior high In college

5. How would you group your family economically?
In need of aid Hardly enough for necessities Enough for necessities only
Enough for a few luxuries Plenty of money

6. How would you group your family culturally?
No intellectual interests Few intellectual interests Normal intellectual interests Some intellectual interests Keen intellectual interests

D. 1. Which credential are you taking? _____ _____
2. What is your major? _____ _____
3. What is your standing? (junior, senior, etc.)? _____ _____
4. What is your grade-point ratio at U.C.L.A.? _____ _____
5. What vocation do you plan to enter? _____ _____
6. What is your sex? _____ _____

Each member of the class was asked to take a pair of blanks, to fill out the white blank as a member of the experimental group, and to find another student of the same sex and class who was not planning to teach who would fill out the pink duplicate. Names were not requested because of the confidential nature of some of the information.

When the blanks were returned, incomplete pairs were discarded. Complete pairs number 122. Responses on each item for teaching and control groups were tallied and converted to percents of N. The difference between percents was found, and the standard error of the difference computed. Ratios were computed and converted to probabilities through the use of standard tables. For the sake of comparison, all results are presented in the same terms.

## RESULTS

Table II presents the frequency of occurrence of each experience presented as a possible origin of interest. Individual items show few reliably greater frequencies for either group, and the total number of such experiences is of doubtful validity as an index of interest. Such difference as occurs, however, favors the teaching group on thirteen out of sixteen items.

Table III presents the attitude generated in the experiences enumerated. The teaching group significantly exceeded the control group on the number who liked playing school and taking charge of the class when the teacher was absent. The control group significantly exceeded on the number who disliked playing school and taking charge of the class when the teacher is absent. The totals show the teaching group likes and the control group dislikes or is indifferent to such experiences as the sixteen analyzed.

Table IV presents an analysis of personal motivation as differentiated from experience motivation. Members of the control group have been significantly less often advised to teach. There is no significant difference between teaching and control groups in the presence of teaching as a family vocation. The importance of the personal ideal is seen in the fact that for

## TABLE II

### FREQUENCY OF OCCURRENCE OF CERTAIN EXPERIENCES

| Item | Frequency | | Percent | | D | $\sigma_{Dp}$ | Ratio | Probability |
|---|---|---|---|---|---|---|---|---|
| | T | C | T | C | | | | |
| 15. Done practice teaching | 13 | 0 | Compar | ison not | valid—N | o Contro | l | |
| *17. Other similar experiences | 39 | 20 | 32.0 | 16.4 | T15.6 | 5.4 | T 2.9 | T100 |
| 16. Taught a regular class | 19 | 7 | 15.6 | 5.8 | T 9.8 | 3.9 | T 2.5 | T100 |
| 11. Acted as counselor in a summer camp | 26 | 15 | 21.3 | 12.3 | T 9.0 | 4.7 | T 1.9 | T 97 |
| 2. Cared for children outside your immediate family | 90 | 81 | 73.8 | 66.4 | T 7.4 | 5.8 | T 1.3 | T 90 |
| 9. Given music lessons | 27 | 20 | 22.1 | 16.4 | T 5.7 | 5.0 | T 1.1 | T 86 |
| 5. Taken charge of class when the teacher was absent | 85 | 78 | 69.7 | 63.9 | T 5.8 | 6.0 | T 0.9 | T 82 |
| 14. Worked on a playground | 22 | 17 | 18.0 | 13.9 | T 4.1 | 4.7 | T 0.9 | T 82 |
| 13. Sponsored a Scout or Campfire group | 22 | 19 | 18.0 | 15.6 | T 2.4 | 4.7 | T 0.5 | T 69 |
| 3. Played school | 101 | 99 | 82.8 | 81.1 | T 1.7 | 4.9 | T 0.3 | T 62 |
| 4. Read stories to children | 106 | 105 | 86.9 | 86.1 | T 0.8 | 4.4 | T 0.2 | T 58 |
| 10. Taught a Sunday School class | 39 | 38 | 32.0 | 31.2 | T 0.8 | 6.0 | T 0.1 | T 54 |
| 7. Worked in the school office | 62 | 63 | 50.8 | 51.6 | C 0.8 | 6.4 | C 0.1 | T 54 |
| 8. Tutored or coached a student in a subject | 67 | 68 | 54.9 | 55.7 | C 0.8 | 6.3 | C 0.1 | T 54 |
| 1. Cared for younger children in your family | 57 | 59 | 46.7 | 48.4 | C 1.7 | 6.4 | C 0.3 | C 62 |
| 12. Worked in a neighborhood settlement house | 4 | 8 | 3.3 | 6.6 | C 3.3 | 2.8 | C 1.2 | C 88 |
| 6. Taken charge of your own class as a class officer | 56 | 67 | 45.9 | 54.9 | C 9.0 | 6.4 | C 1.4 | C 92 |
| Total (N2071 responses) | 835 | 764 | 40.3 | 36.8 | T 3.5 | 1.5 | T 2.3 | T 99 |

*Student counseling, teaching Bible School, instructing in sports in boys' club, acting as teaching assistant, leading church groups, acting as club officer.

## TABLE III

### AFFECTIVE VALUE OF PRE-TEACHING EXPERIENCES

| Item | | Frequency | | Percent | | D | $\sigma_{Dp}$ | Ratio | Probability |
|---|---|---|---|---|---|---|---|---|---|
| | | T | C | T | C | | | | |
| 3. Played school | L | 98 | 80 | 97.0 | 80.8 | T16.2 | 4.3 | T 3.8 | T100 |
| | ? | 3 | 11 | 3.0 | 11.1 | C 8.1 | 3.6 | C 2.2 | C 99 |
| | D | 0 | 8 | 0.0 | 8.1 | C 8.1 | 2.7 | C 3.0 | C100 |
| 5. Taken charge of the class when the teacher was absent | L | 79 | 55 | 92.9 | 70.5 | T22.4 | 5.9 | T 3.8 | T100 |
| | ? | 5 | 12 | 5.9 | 15.4 | C 9.5 | 4.8 | C 2.0 | C 98 |
| | D | 1 | 11 | 1.2 | 14.1 | C12.9 | 4.1 | C 3.1 | C100 |
| 4. Read stories to children | L | 93 | 80 | 87.8 | 76.2 | T11.6 | 5.2 | T 2.2 | T 99 |
| | ? | 10 | 13 | 9.4 | 12.4 | C 3.0 | 4.3 | C 0.7 | C 76 |
| | D | 3 | 12 | 2.8 | 11.4 | C 8.6 | 3.2 | C 2.7 | C100 |
| 6. Taken charge of your own class as a class officer | L | 53 | 55 | 94.6 | 82.1 | T12.5 | 5.6 | T 2.2 | T 99 |
| | ? | 1 | 8 | 1.8 | 11.9 | C10.1 | 4.3 | C 2.3 | C 99 |
| | D | 2 | 4 | 3.6 | 6.0 | C 2.4 | 3.8 | C 0.6 | C 73 |
| 8. Tutored or coached a student in a subject | L | 62 | 54 | 92.5 | 79.4 | T13.1 | 5.9 | T 2.2 | T 99 |
| | ? | 2 | 6 | 3.0 | 8.8 | C 5.8 | 4.0 | C 1.4 | C 92 |
| | D | 3 | 8 | 4.5 | 11.8 | C 7.3 | 4.7 | C 1.6 | C 94 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ? | 10 | 13 | 9.4 | 12.4 | C 3.0 | 4.3 | C 0.7 | C 76 | |
| | D | 3 | 12 | 2.8 | 11.4 | C 8.6 | 3.2 | C 2.7 | C100 | |
| 6. Taken charge of your own class as a class officer | L | 53 | 55 | 94.6 | 82.1 | T12.5 | 5.6 | T 2.2 | T 99 | |
| | ? | 1 | 8 | 1.8 | 11.9 | C10.1 | 4.3 | C 2.3 | C 99 | |
| | D | 2 | 4 | 3.6 | 6.0 | C 2.4 | 3.8 | C 0.6 | C 73 | |



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 8. Tutored or coached a student in a subject | L | 62 | 54 | 92.5 | 79.4 | T13.1 | 5.9 | T 2.2 | T 99 | |
| | ? | 2 | 6 | 3.0 | 8.8 | C 5.8 | 4.0 | C 1.4 | C 92 | |
| | D | 3 | 8 | 4.5 | 11.8 | C 7.3 | 4.7 | C 1.6 | C 94 | |
| 10. Taught a Sunday School Class | L | 34 | 31 | 87.2 | 81.6 | T 5.6 | 2.9 | T 1.9 | T 97 | |
| | ? | 2 | 4 | 5.1 | 10.5 | C 5.4 | 6.1 | C 0.9 | C 82 | |
| | D | 3 | 3 | 7.7 | 7.9 | C 0.2 | 6.1 | 0.0 | 50 | |
| 2. Cared for children outside your immediate family | L | 75 | 58 | 83.3 | 71.6 | T11.7 | 6.4 | T 1.8 | T 96 | |
| | ? | 6 | 11 | 6.7 | 13.6 | C 6.9 | 4.6 | C 1.5 | C 93 | |
| | D | 9 | 12 | 10.0 | 14.8 | C 4.8 | 5.1 | C 0.9 | C 82 | |
| 12. Worked in a neighborhood settlement house | L | 4 | 6 | 100.0 | 75.0 | T25.0 | 15.3 | T 1.6 | T 94 | |
| | ? | 0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50 | |
| | D | 0 | 2 | 0.0 | 25.0 | C25.0 | 15.3 | C 1.6 | C 94 | |
| 11. Acted as counselor in a summer camp | L | 26 | 13 | 100.0 | 86.6 | T13.4 | 8.8 | T 1.5 | T 93 | |
| | ? | 0 | 1 | 0.0 | 6.7 | C 6.7 | 6.5 | C 1.0 | C 84 | |
| | D | 0 | 1 | 0.0 | 6.7 | C 6.7 | 6.5 | C 1.0 | C 84 | |
| 17. Other similar experiences | L | 35 | 16 | 89.8 | 80.0 | T 9.8 | 10.2 | T 1.0 | T 84 | |
| | ? | 4 | 4 | 10.2 | 20.0 | C 9.8 | 10.2 | C 1.0 | C 84 | |
| | D | 0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50 | |
| 13. Sponsored a Scout or Campfire group | L | 20 | 16 | 91.0 | 84.2 | T 6.8 | 10.4 | T 0.6 | T 73 | |
| | ? | 1 | 2 | 4.5 | 10.5 | C 6.0 | 8.3 | C 0.7 | C 76 | |
| | D | 1 | 1 | 4.5 | 5.3 | C 0.8 | 6.8 | C 0.1 | C 54 | |
| 16. Taught a regular class | L | 18 | 6 | 94.7 | 85.7 | T 9.0 | 14.2 | T 0.6 | T 73 | |
| | ? | 1 | 0 | 5.3 | 0.0 | T 5.3 | 5.1 | T 1.0 | T 84 | |
| | D | 0 | 1 | 0.0 | 14.3 | C14.3 | 13.2 | C 1.1 | C 86 | |
| 9. Given music lessons | L | 23 | 18 | 85.2 | 90.0 | C 4.8 | 9.6 | C 0.5 | C 69 | |
| | ? | 2 | 0 | 7.4 | 0.0 | T 7.4 | 5.0 | T 1.5 | T 93 | |
| | D | 2 | 2 | 7.4 | 10.0 | C 2.6 | 8.4 | C 0.3 | C 62 | |
| 1. Cared for younger children in your family | L | 42 | 41 | 73.9 | 69.6 | T 4.3 | 8.3 | T 0.5 | T 69 | |
| | ? | 9 | 9 | 15.7 | 15.2 | T 0.5 | 6.2 | T 0.1 | T 54 | |
| | D | 6 | 9 | 10.4 | 15.2 | C 4.8 | 6.7 | C 0.8 | C 79 | |
| 14. Worked on a playground | L | 18 | 13 | 81.8 | 76.4 | T 5.4 | 13.2 | T 0.4 | T 65 | |
| | ? | 3 | 2 | 13.6 | 11.8 | T 1.8 | 10.7 | T 0.2 | T 58 | |
| | D | 1 | 2 | 4.5 | 11.8 | C 7.3 | 9.0 | C 0.8 | C 79 | |
| 7. Worked in the school office | L | 56 | 56 | 90.3 | 88.9 | T 1.4 | 5.5 | T 0.3 | T 62 | |
| | ? | 1 | 2 | 1.6 | 3.2 | C 1.6 | 2.7 | C 0.6 | C 74 | |
| | D | 5 | 5 | 8.1 | 7.9 | T 0.2 | 4.9 | 0.0 | 50 | |
| 15. Done practice teaching | Comparison Not Valid— | | | No Control Group. | | | | | | |
| Total (N = T822, C764) | L | 736 | 598 | 89.5 | 78.3 | T11.2 | 1.9 | T 5.9 | T100 | |
| | ? | 50 | 85 | 6.1 | 11.1 | C 5.0 | 1.4 | C 3.6 | C100 | |
| | D | 36 | 81 | 4.4 | 10.6 | C 6.2 | 1.3 | C 4.8 | C100 | |

TABLE IV

PERSONAL MOTIVATION

| Item | Frequency | | Percent | | D | $\sigma_{Dp}$ | Ratio | Probability |
|---|---|---|---|---|---|---|---|---|
| | T | C | T | C | | | | |
| **C2. What persons have advised you that you would make a good teacher?** | | | | | | | | |
| No one | 16 | 50 | 6.6 | 27.3 | C20.7 | 3.7 | C 5.6 | C100 |
| Family | 75 | 39 | 30.8 | 21.4 | T 9.4 | 4.27 | T 2.27 | T 99 |
| Teacher | 51 | 27 | 21.0 | 14.7 | T 6.3 | 3.7 | T 1.7 | T 95 |
| Counselor | 14 | 12 | 5.8 | 6.6 | C 0.8 | 2.4 | C 0.3 | C 62 |
| Friends | 87 | 55 | 35.8 | 30.0 | T 5.8 | 4.6 | T 1.3 | T 90 |
| N | 243 | 183 | | | | | | |
| **C3. What relatives and friends have been teachers?** | | | | | | | | |
| None | 28 | 32 | 14.9 | 18.7 | C 3.8 | 4.0 | C 0.9 | C 82 |
| Parent | 30 | 26 | 16.1 | 15.2 | T 0.9 | 3.87 | T 0.23 | T 55 |
| Sibling | 17 | 9 | 9.1 | 5.3 | T 3.8 | 2.7 | T 1.4 | T 92 |
| Other relatives | 53 | 50 | 28.4 | 29.2 | C 0.8 | 4.8 | C 0.2 | C 58 |
| Close friends | 59 | 54 | 31.5 | 31.6 | C 0.1 | 4.9 | C 0.0 | C 50 |
| N | 187 | 171 | | | | | | |
| **C4. Have you ever wished to be just like some particular teacher?** | | | | | | | | |
| Never | 32 | 57 | 20.0 | 40.7 | C20.7 | 5.2 | C 4.0 | C100 |
| Elementary | 45 | 19 | 28.1 | 13.6 | T14.5 | 4.66 | T 3.2 | T100 |
| Jr. High | 20 | 14 | 12.5 | 10.0 | T 2.5 | 3.66 | T 0.7 | T 76 |
| Sr. High | 32 | 29 | 20.0 | 20.7 | C 0.7 | 4.7 | C 0.1 | C 54 |
| College | 31 | 21 | 19.4 | 15.0 | T 4.4 | 4.8 | T 1.0 | T 84 |
| N | 160 | 140 | | | | | | |

a significantly greater number of the control group a teacher has never occupied that position. In the teaching group, a teacher-ideal at the elementary school level is the significant factor.

## INTERPRETATION

In interpreting the data it is important to remember that the comparison is between college students who do and college students who do not wish to teach. In interpreting the data for junior college and high school groups it may be assumed that such differences will be magnified.[1]

The reason for the difference in attitude toward pre-teaching experiences may be two-fold. Perhaps the experience serves as a screening process, sifting those who possess personal qualities essential for the development of mature interest and success from those who do not. Perhaps on the other hand the pre-teaching experience gains positive or negative value through accidental factors such as inadequate supervision, inadequate recognition, or lack of preparation. Perhaps both factors are present. In the first case, the pre-teaching experience has value in guidance. In the second, it has instructional value in building motivation. In any case, it appears to have value in aiding in interpretation of content in pre-training courses in the opinion of instructors in those courses.

The significance of the personal ideal at the elementary school level may be related to the fact that more than half of the students in the class were taking a credential for work at that level. The theory of certain social psychologists that the transfer of the personal ideal to someone outside the family occurs at about the beginning of the elementary school period, and that the change from personal to abstract or synthetic ideal takes place at adolescence, may also be significant. The importance of the classroom teacher of today in determining the teaching personnel of tomorrow is strongly emphasized.

## CONCLUSIONS

1. It is doubtful whether the specific pre-teaching experiences analyzed are found in the histories of potential teachers more often than in the histories of college students in general.

[1] See Seagoe, May V. "Counseling for the Teaching Profession," *Junior College Journal*, XI (September, 1940), 10–13. Comparable material on a pre-teaching group in a junior college is in preparation.

2. When such experiences do occur, the potential teacher tends to like them and the general college student to dislike or be indifferent to them. Particularly significant items are playing school and taking charge of a class in the absence of the teacher.

3. Personal motivation on the part of a teacher, either through direct advice or through acting as the personal ideal at the elementary school level, is a significant factor differentiating potential teachers from college students in general.

# TEMPERAMENT IN PROSPECTIVE TEACHERS*

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*Editor's note:* The factors in teaching efficiency are doubtless many in number. The authors present data on the temperament of prospective teachers. Temperament is defined as the sum total of the emotional qualities of the individual.

PROBABLY the most outstanding work in America in the study of personality has been done by Rosanoff. From his own extensive observation and from the work of many other psychiatrists in Europe and America, he has developed a theory of personality which is widely accepted. This theory is based upon two major premises: (a) the belief that temperament can be analyzed into seven components or groups of traits; (b) the belief that abnormal behavior is merely uncontrolled manifestations of the same temperamental components as actuate normal individuals. *Temperament* is defined as the sum total of all the emotional qualities of the individual, what he feels and how he responds.

## COMPONENTS OF TEMPERAMENT**

The seven components of temperament are:

1. The "normal" component, (N), a control mechanism, providing rational balance and temperamental equilibrium. It is responsible for the conservatism and conformity to socially acceptable behavior which are observed in well adjusted persons. In those who may be termed ultra-conservative the "normal" component is over-accentuated. The term "normal" is used alone to indicate such indiscriminating conservatism. Usually the term is employed in combinations such as "normal"-cycloid, "normal"-schizoid, where it refers to individuals whose temperament is under control

* The study reported is part of a comprehensive investigation of teacher education in progress at the State University of Iowa, under the direction of Dean P. C. Packer and Doctor Harry K. Newburn.

** The material in this section is adapted from Rosanoff and from Humm and Wadsworth. It is given here to provide a minimum basis for understanding the gist of this report. The reader is referred to the references at the end of the article for more adequate interpretation of terms.

and who are essentially well adjusted, but who also reveal a large degree of some other component. The probability of adjustment difficulties increases as other components approach or exceed the showing made in the "normal" component.

2. The hysteroid component, (H), concerned chiefly with self-preservation. With an excess of this component, an individual possesses a character defect with ethically inferior motivation, revealed by malingering, stealing, cheating, lying and other anti-social conduct. A moderate degree of the hysteroid component is at the root of prudence, shrewdness, and diplomacy.

3, 4. The cycloid component, contributing emotionality, fluctuations in activity and interference with voluntary attention. The manic phase, (M), is manifested by elation, distractibility, with such indications of excitement as jests, pranks, enthusiasms, and impatience. The depressed phase (D), is manifested by some degree of sadness, lessened activity, dearth of ideas, worry, timidity, unpleasant bodily sensations. In general, a cycloid nature vacillates between these two phases.

5, 6. The schizoid component, characterized by heightened imagination. The autistic phase, (A), is manifested by shyness, abnormal suggestibility, accompanied by an ability to visualize and to concentrate on special tasks. The paranoid phase, (P), is characterized by stubborn adherence to fixed ideas, a high degree of conceit, suspicion, and contempt for the opinions of others.

7. The epileptoid phase, (E), characterized by strong, unreasoning personal attachments, and less often by prejudices and dislikes. There is a tendency toward religious fervor, credulousness and superstition. A heightened feeling of self and craving for self-expression may give rise to inspirations to achievement which are meticulously developed and completed. Inconsistencies of conduct are characteristic marks of the epileptoid personality.

Almost all temperaments have tendencies in the direction of one or more of these components. In fact, where there is no unevenness revealed in the makeup of the temperament, the individual is most likely an uninteresting, colorless or indifferent specimen.

The measuring instrument used in this study of personality is the Humm–Wadsworth Temperament Scale. This scale was developed in an attempt to fit people to jobs in which they would be happy and successful. It is based on the assumption that the components described above can be quantitatively measured.

## PROCEDURE IN THE PRESENT STUDY

In January and March, 1938, the writers administered the Humm–Wadsworth Scale to 281 seniors in the College of Education at the State University of Iowa. The purpose was to determine whether or not the student teachers possessed any definite pattern of the components of temperament. All the students were between twenty-one and twenty-two years of age with few exceptions. The scale was administered in written form during meetings of students in groups of twenty to forty in a course known as Laboratory Practice and Observation. Adequate time was allowed for all to finish, practically no student requiring more than a fifty-minute class period.

The papers were scored according to the key provided by the authors. Each of the 318 statements to be responded to by "Yes" or "No" by the subject was weighted according to directions, and the raw scores thus derived were transmitted into profile values in accordance with norms developed in the original standardization of the scale. With the aid of Hollerith tabulating equipment, the raw scores were treated to discover group trends and comparative trends, if any. Of the 281 subjects tested, 186 were found to have turned in valid papers under the terms of interpretation established by the authors of the scale. The final group was composed of 127 women and 59 men.

The basic data derived from the 186 valid scales are presented in Table I and Table II. The norms upon which the profiles are based (Figures 1 to 10) are given below.

| Profile value | | Score limits* | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | N | H | M | D | A | P | E |
| Strong positive | +3 | 55– | 72– | 42– | 66– | 68– | 38– | 52– |
| Average positive | +2 | 46–54 | 56–71 | 35–41 | 56–65 | 59–67 | 32–37 | 44–51 |
| Weak positive | +1 | 43–45 | 51–55 | 29–34 | 44–55 | 46–58 | 30–31 | 37–43 |
| Borderline | 0 | 35–42 | 38–50 | 22–28 | 34–43 | 38–45 | 24–29 | 29–36 |
| Weak negative | —1 | 30–34 | 30–37 | 20–21 | 25–33 | 28–37 | 22–23 | 24–28 |
| Average negative | —2 | 23–29 | 20–29 | 13–19 | 15–24 | 20–27 | 13–21 | 16–23 |
| Strong negative | —3 | 0–22 | 0–19 | 0–12 | 0–14 | 0–19 | 0–12 | 0–15 |

* The symbols N, H, M, D, A, P, E stand for the components described above.

A study of Tables I and II shows, and profiles in the following pages display graphically, that as far as the quantitative measurement of the temperament is concerned, there is very little difference between any two groups as identified in this study. The mean group scores showing the largest differences are as follows:

TABLE I

PERFORMANCE BY STUDENT TEACHERS GROUPED BY PREFERENCE FOR TEACHING AS A VOCATION*

| Group | | "Normal" | | Hysteroid | | Manic | | Depressed | | Autistic | | Paranoid | | Epileptoid | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. |
| Men, 1st choice | ( 31) | 41.8 | 9.0 | 37.1 | 9.6 | 31.4 | 7.3 | 35.5 | 13.6 | 30.5 | 13.4 | 19.5 | 6.2 | 23.0 | 6.9 |
| Women, 1st choice | ( 56) | 42.0 | 7.2 | 32.4 | 8.3 | 36.8 | 6.5 | 41.3 | 12.8 | 30.6 | 11.3 | 20.8 | 7.3 | 22.4 | 7.6 |
| Total, 1st choice | ( 87) | 41.9 | 7.9 | 34.1 | 9.0 | 34.2 | 7.0 | 39.2 | 13.2 | 30.6 | 12.1 | 20.3 | 7.0 | 22.6 | 7.4 |
| Men, 2nd choice | ( 17) | 39.6 | 6.9 | 40.4 | 10.9 | 33.1 | 6.0 | 40.7 | 11.7 | 24.6 | 8.3 | 19.6 | 6.3 | 22.1 | 6.4 |
| Women, 2nd choice | ( 46) | 39.8 | 6.5 | 33.1 | 11.1 | 36.1 | 6.1 | 44.8 | 11.7 | 33.4 | 13.4 | 20.1 | 6.3 | 22.8 | 7.4 |
| Total, 2nd choice | ( 63) | 39.8 | 6.6 | 35.1 | 11.5 | 35.3 | 6.1 | 43.7 | 11.8 | 31.0 | 12.6 | 19.9 | 6.3 | 22.6 | 7.1 |
| Other men | ( 11) | 39.2 | 6.6 | 43.3 | 17.2 | 34.6 | 4.4 | 42.2 | 7.7 | 28.8 | 8.2 | 23.9 | 5.6 | 20.9 | 7.0 |
| Other women | ( 25) | 39.4 | 6.0 | 32.8 | 10.3 | 35.2 | 7.2 | 42.8 | 14.4 | 32.0 | 15.6 | 20.9 | 5.9 | 22.6 | 5.4 |
| Total | ( 36) | 39.3 | 6.2 | 36.0 | 13.7 | 35.0 | 6.5 | 42.6 | 12.7 | 31.4 | 13.9 | 21.8 | 5.9 | 22.1 | 6.0 |
| Total men | ( 59) | 40.7 | 7.4 | 39.2 | 12.0 | 32.5 | 6.5 | 38.2 | 12.5 | 28.5 | 11.5 | 20.4 | 6.3 | 21.9 | 4.7 |
| Total women | (127) | 40.7 | 6.8 | 32.8 | 9.3 | 35.8 | 6.7 | 42.9 | 13.0 | 32.0 | 13.1 | 20.5 | 6.9 | 22.4 | 9.2 |
| Total, all subjects | (186) | 40.7 | 7.1 | 34.8 | 11.0 | 34.8 | 6.7 | 41.4 | 13.1 | 30.9 | 12.7 | 20.5 | 6.8 | 22.3 | 7.2 |

* Numbers in parentheses show number of cases.

TABLE II

PERFORMANCE BY STUDENT TEACHERS GROUPED ON BASES OF MARKS IN PRACTICE TEACHING AND ESTIMATES OF TEACHING SUCCESS*

| Group | "Normal" | | Hysteroid | | Manic | | Depressed | | Autistic | | Paranoid | | Epileptoid | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. |
| Students with Marks A and B (102) | 40.1 | 7.7 | 34.7 | 10.4 | 35.0 | 6.5 | 41.8 | 13.1 | 32.3 | 12.6 | 21.0 | 6.8 | 22.2 | 6.5 |
| Students with Marks C, D, and Fd (84) | 41.8 | 6.6 | 34.9 | 11.6 | 34.6 | 6.8 | 40.5 | 12.5 | 29.2 | 12.5 | 19.9 | 6.4 | 22.6 | 7.6 |
| Students with Estimates of Superior and Very Good (60) | 40.1 | 7.7 | 33.7 | 9.3 | 35.3 | 6.9 | 42.5 | 13.1 | 32.5 | 11.4 | 20.8 | 6.4 | 22.4 | 7.2 |
| Students with Estimates of Good (66) | 40.0 | 7.2 | 35.3 | 11.4 | 35.0 | 6.7 | 41.7 | 12.9 | 32.0 | 14.3 | 21.4 | 6.5 | 22.2 | 6.3 |
| Students with Estimates of Fair, Poor, and Failure (60) | 42.7 | 6.4 | 35.4 | 11.8 | 34.2 | 6.4 | 39.4 | 12.3 | 28.0 | 11.4 | 19.4 | 6.7 | 20.4 | 7.7 |

* Numbers in parentheses show number of cases.

| Component | Mean | S. D. | Mean | S. D. | Critical Ratio |
|---|---|---|---|---|---|
| | Teaching as First Choice | | | | |
| | 31 Men | | 56 Women | | |
| Hysteroid | 37. 1 | 9. 6 | 32. 4 | 8. 3 | 2. 4 |
| Manic | 31. 4 | 7. 3 | 36. 8 | 6. 5 | 3. 4 |
| Depressed | 35. 5 | 13. 6 | 41. 3 | 12. 8 | 2. 0 |
| | Teaching as Second Choice | | | | |
| | 17 Men | | 46 Women | | |
| Hysteroid | 40. 4 | 10. 9 | 33. 1 | 11. 1 | 2. 4 |
| Autistic | 24. 6 | 8. 3 | 33. 4 | 13. 4 | 3. 1 |
| | Other Students | | | | |
| | 11 Men | | 25 Women | | |
| Hysteroid | 43. 3 | 17. 2 | 32. 8 | 10. 3 | 1. 8 |

The table of norms indicates that the differences are not large enough to warrant the drawing of any conclusions to the effect that important differences exist in the temperamental constitution of any groups, even though critical ratios in two cases indicate statistically significant differences.

To discover whether or not any one component weighed heavily in the critic teachers' estimates of probable teaching success of their proteges, the records of the students in the upper quarter and the lower quarter of the distribution were examined. There was a slight tendency for those with low "normal" component and those with high paranoid component to be judged among the superior and very good candidates more often than among the weak candidates. Other indications pointed to the hopelessness of trying to distinguish between the two groups (superior and inferior candidates) on the basis of performance on the scale. When the upper ten per cent and the lower ten per cent were compared, again on the basis of estimated success, the same tendencies were noted. Students who rated outstandingly low in any one component, except "normal," were rated lower, in general, than students who rated high in any one component.

### COMPARISON OF STUDENT TEACHERS WITH ADULTS AND ADOLESCENTS

During the year 1936–37 Houtchens measured 417 subjects, using the scale employed in the present study. He worked with adults, normal adolescents, and delinquent adolescents. For the purpose of comparing the performance of student teachers with results reported by Houtchens, Table III is presented. It will be noted that the student teachers (see Table I) aver-

TABLE III

CENTRAL TENDENCY AND VARIABILITY IN PERFORMANCE OF ADULTS AND NORMAL ADOLESCENTS*

(From Houtchens)

| Group | "Normal" | | Hysteroid | | Manic | | Depressed | | Autistic | | Paranoid | | Epileptoid | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. | Mean | S. D. |
| Adult Males (35) | 38.7 | 9.4 | 40.0 | 12.9 | 36.0 | 8.4 | 44.0 | 18.3 | 33.2 | 12.2 | 24.9 | 9.2 | 23.5 | 7.6 |
| Adult Females (55) | 41.0 | 8.2 | 31.9 | 11.9 | 33.8 | 9.9 | 41.8 | 18.7 | 34.5 | 16.2 | 21.1 | 7.9 | 23.4 | 7.3 |
| Total adults (90) | 39.6 | 8.4 | 36.4 | 12.9 | 35.9 | 8.5 | 44.0 | 18.0 | 32.9 | 14.6 | 22.4 | 8.5 | 23.4 | 7.2 |
| Adolescent Boys (70) | 32.3 | 7.8 | 43.9 | 10.8 | 34.4 | 7.5 | 45.2 | 14.7 | 38.8 | 12.5 | 30.5 | 8.4 | 27.0 | 7.0 |
| Adolescent Girls (60) | 30.7 | 8.1 | 42.9 | 11.0 | 40.1 | 7.7 | 52.7 | 13.8 | 44.5 | 11.8 | 31.2 | 7.7 | 25.9 | 7.1 |
| Total adolescents (130) | 31.9 | 7.9 | 43.3 | 10.9 | 37.0 | 7.6 | 49.2 | 14.2 | 41.3 | 12.0 | 30.8 | 7.9 | 26.4 | 7.1 |

* Numbers in parentheses show number of cases.

aged relatively high in the "normal" component, and, compared with most of the groups listed in Table III low in the other components. Perhaps this may be taken as an indication that the prospective teachers are better controlled emotionally than the other groups, less given to extremes of behavior, more conventional and conservative.

### GROUP PROFILES

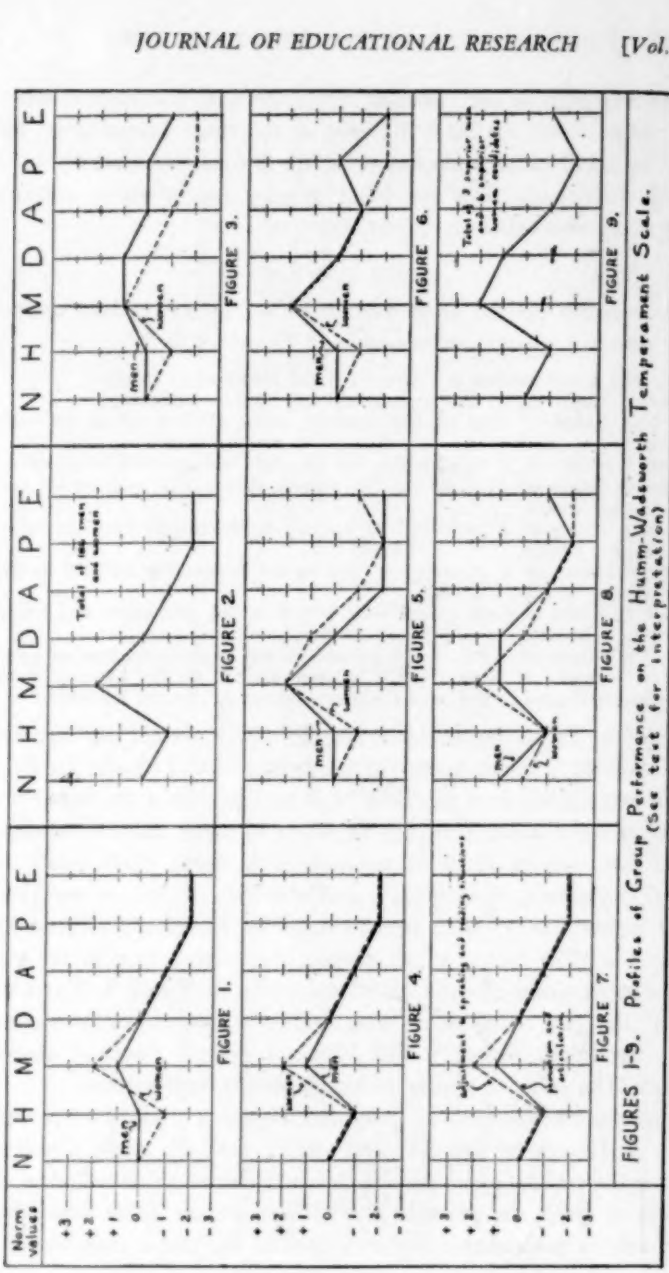
Profile charts plotted from average scores in the various components made by different groups are presented in Figures 1 to 9.

*Note.* The group profiles in Figures 1–9 are identified as follows:
Figure 1. Norm values for 59 men and 127 women students.
Figure 2. Scores of total of 186 students, using median values for each component.
Figure 3. Scores of 35 adult males and 55 adult females studied by Houtchens.
Figure 4. Scores of 31 men and 56 women designating teaching as their first vocational choice.
Figure 5. Scores of 17 men and 46 women designating teaching as their second vocational choice.
Figure 6. Scores of 11 men and 25 women not designating teaching as their first or second vocational choice.
Figure 7. Scores of three groups rated lowest in (a) phonation, (b) articulation, (c) adjustment to speaking and reading situations.
Figure 8. Scores of 6 men and 9 women judged by critic teachers as unadjusted.
Figure 9. Scores of 3 men and 6 women selected on the bases of marks and estimated success as the most superior students in practice teaching.

Figure 1. In all the components the profile values are identical for men and women students except in the hysteroid and manic. In the manic phase the women fall in a relatively high position when the strength of the "normal" is considered. This may be taken to mean that the women more than the men will be likely to manifest such manic characteristics as enthusiasm, impatience, emotionality, and the like. In this respect they fall one step higher than 55 adult females tested by Houtchens (Figure 3).

Figure 2. The typical scores plotted in Figure 2 vary in no particular from the mean scores of the total group shown in Figure 1. The numerical values of the raw scores show only fractional differences between means and medians. Both Figure 1 and Figure 2 portray "normal"-manic temperaments. The subjects appear to be essentially well-balanced.

Figure 3. For comparative purposes, Figure 3 is given to present data secured by Houtchens for 35 adult males and 55 adult females. Men teachers are possibly given less to ups-and-downs of mood than the 35 males whose scores are plotted. The college women differ from the adult females only in possessing a higher degree of the manic component.




FIGURES 1-9. Profiles of Group Performance on the Humm-Wadsworth Temperament Scale. (See text for interpretation)

Figures 4, 5, and 6. These profiles show that no pronounced differences can be reported among groups designating teaching as their first, second, or other choice of vocation. The largest difference is in the paranoid component where the profile value for eleven men not naming teaching as either first or second choice is two steps higher than for any other group (Figure 6). In all groups the manic component has greatest strength.

Figure 7. In a study by Wagner, 92 of the 186 subjects of the present study were rated poor, very poor, or inferior in phonation in speech-making and oral reading. Eighty subjects were similarly rated in articulation. Twenty-one were rated in the same way with respect to adjustment in speaking and reading situations. Mean scores made by these three groups on the Humm–Wadsworth scale were computed by the writer, as well as mean scores for students rated good or excellent. The pattern of the averages for the inferior students plotted in Figure 7 differs scarcely at all from the other group profiles shown. A similar likeness was noted between Figure 7 and the profile for the best speakers (not shown). No matter what the individual temperament, a subject may turn in a superior or an inferior speech performance. The only noteworthy peak in Figure 7 is the value for the manic phase for the twenty-one prospective teachers rated lowest in adjustment to speaking and reading situations.

Figure 8. Among the 186 subjects there were six men and nine women whom critic teachers indicated as maladjusted. Possibly the most striking feature about Figure 8 is the value of the "normal" component. For the students supposed to have the most difficulty in adjustment, this value falls one step above borderline, whereas for all other groups thus far described, the value is borderline. From only an inspection of the profiles one might hazard that the group represented in Figure 8 is better adjusted than any other.

Figure 9. The scores of three men and six women, selected on the basis of high marks in practice teaching and critic teachers' estimates as the best prospects are here plotted. There is scarcely any difference in the component values for these most superior students and the most inferior shown in Figure 8.

### STUDENTS WEAK IN THE "NORMAL" COMPONENT

The authors of the scale state that individuals who score below borderline in "normal" may find difficulty in reaching satisfactory adjustment. With this in mind, the profiles of individual students were examined to

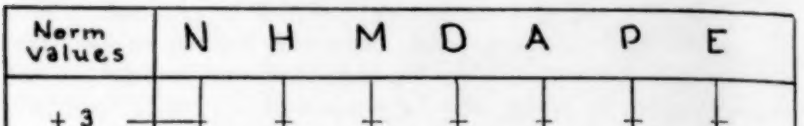



Figure 10. Scores of 9 Men and 25 Women students below borderline (0) in "normal", at the same time higher than borderline in one or more of the other components

select such persons from the total distribution. Nine men and 25 women scored below borderline on the profile scale, at the same time scoring higher in one or more of the other components. This represents 13.5% of the men and 20.8% of the women. The composite profile for these is shown in Figure 10. In all aspects except "normal" the nine men exceed the average of the original group of 59 men. The 25 low-"normal" women exceed the average of the original 127 women in every component except epileptoid. While the differences are not large the tendency is clear. Coupled with low strength in the "normal" phase, the excess of strength in other components hints strongly of the possibility of adjustment difficulties. In battery tests, grade point average, major fields of study, and ratings by critic teachers, however, these students represent a pretty good cross-section of the entire student-teacher group.

## SUMMARY AND CONCLUSIONS

In the main, the findings of this study are of a negative nature in that no common temperamental element or pattern of components is discoverable in the data for various groupings of student teachers. There is more difference between the sexes than between groups selected on the bases of (a)

choice of teaching as a career, (b) estimated success as teachers, (c) marks in practice teaching. The largest differences show that men tend to score higher than women in the hysteroid component, while women tend to score higher than men in the manic, depressed, and autistic phases.

Between the men students in this study and the males studied by Houtchens the chief difference is the higher scores made by the latter in four components: depressed, autistic, paranoid, and epileptoid. Adult males fell in the positive area of the profile chart in two components while college men fell in the positive area in only one. There was only a slight quantitative difference in any one component when college women were compared with the adult women in Houtchens' report. The former possessed a slightly higher tendency in the manic phase than the latter.

In speech performance the profile pattern for those who did poorly was not significantly different from that of the best speakers and readers. From an inspection of individual profiles of the best students and of the most unadjusted, no discriminating pattern of component values could be discerned.

A slight tendency was found for students ranking low in "normal" and for students ranking high in paranoid, manic, depressed, or autistic to be rated better by critic teachers than students ranking very low in these elements. Those who scored high in the hysteroid component had less chance to rate high in probable success than students scoring low.

The 34 students whose "normal" values fell below borderline seemed to represent a fair cross-section of the group as a whole. In general, the students' performance in this study lay between that of the adolescents and the adults studied by Houtchens. This was to be expected, for the students were in the period of transition between adolescence and maturity.

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# THE VALIDITY OF COMPOSITE FACULTY JUDGMENT AS A METHOD OF IDENTIFYING UNDESIRABLE PROSPECTIVE ELEMENTARY SCHOOL TEACHERS

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*Editor's note:* One of the problems in the selective admission of students to teacher training curricula is that of discovering and validating acceptable criteria. The author presents data on the validity of composite faculty judgment as a method of identifying undesirable prospective elementary school teachers.

EVERY teachers' college contains students whose personality characteristics, attitudes, interests, personal and social values, etc., unfit them for positions as the teachers of elementary school children. In schools where the development of desirable attitudes, interests, values and habits are major objectives there is special need for teachers who demonstrate the good life in their own lives. Western Washington College has been studying methods of identifying, as early as possible, students whose non-academic characteristics would make them undesirable elementary school teachers. The validity of one method is discussed in this article.

How accurately can the pooled judgment of the faculty members of a teachers' college identify students in their classes who will fail in student teaching or if they obtain teaching positions will be reported as inferior teachers in the field? In 1931, a method was outlined at Western Washington College that, it was hoped, would answer this question. At the end of each quarter since the spring quarter of the 1931–32 school year (summer sessions excepted) each faculty member has been asked to report the name of one student for each fifteen in his class who, in his opinion, would make the least desirable elementary school teacher.

The following explanation was given to each faculty member: "In selecting the names to be listed, faculty members should attempt to be uninfluenced by scholastic achievement. There are fairly adequate measures of academic ability now in use. Instructors should base their selection of these students upon their estimate of: undesirable attitude toward life, emotional instability, inability to express oneself, particularly orally, nervous instability, lack of qualities of leadership, lack of a reasonable amount of enthusiasm and vitality, and disfigurement. These are only suggestions of the things which we think faculty members should keep in mind in attempting to

identify those students who have the poorest possibilities of becoming successful teachers. Marked lack in a student of some of the qualities usually recognized to be necessary for elementary school teaching does not necessarily indicate that the same individual would not make a worthwhile teacher at some other level. It might help you to imagine yourself a parent of an elementary school child and then select the student from your class who, you think, would be least desirable to be your child's teacher."

The present study evaluates the records of students reported by the faculty from the spring quarter, 1932, to the end of the summer quarter, 1939. From 1932 to 1936 the information collected by means of these reports was held in strict confidence. During this period every precaution was used to prevent anyone from knowing the names of the students reported or the number of times they had been mentioned. The two people who knew the names and had access to the files made no use of this information during this period. All these precautions were taken so that a fair evaluation of the reports might be made. At the end of 1936 a study of the results showed clearly that the method was useful so the data were used thereafter in the guidance program of the college.

These reports of students, who, in the judgment of the faculty, were likely to make the poorest teachers have been subjected to a variety of analyses to answer several questions: (a) How does the scholarship of students who are mentioned as least desirable by the faculty compare with the scholarship of the total student body? (b) How do the college aptitude ratings of those mentioned compare with the college aptitude ratings of the total student body? (c) How does the percentage of those mentioned who are graduated compare with the percentage of the total student body who are graduated? (d) How do the student teaching grades of those mentioned compare with the student teaching grades of the total student body? (e) Do those among the mentioned group who are graduated secure positions as frequently as the graduates as a whole? (f) Do the field ratings of those who receive positions in the mentioned group compare favorably or unfavorably with typical field ratings?

The assumptions underlying this method of selecting students likely to be least satisfactory as teachers are these: The success or failure of teachers in the field frequently depends upon the impression, irrespective of scholarship, which they make upon influential members of the community. Faculty members probably know their students as well as the typical father, mother,

school board member and superintendent in the average elementary school situation. If a student frequently impresses faculty members as having objectionable traits, it is assumed that these same traits will be observed by a critic teacher in the training school and by an elementary school community.

If the faculty can identify early a considerable number of students, who, if they continue in the teacher training course, are likely to fail to become satisfactory teachers, it should be possible to guide these students into other fields of activity where they may be more successful; or, if the undesirable traits can be eliminated or modified, the help necessary to bring this about may be given before the students begin their student teaching.

Between 1932 and 1936, 1005 different students were mentioned by faculty members as least desirable prospective teachers. Because of the notorious unreliability of the typical individual rating, it was decided to ignore the records of students who were mentioned only once or twice. Out of the 1005 students, there were 143 who were mentioned three or more times. The data on which the conclusions of this study are based were drawn from this group of 143 students. This group will be referred to as the "mentioned" group.

It was impossible to determine the exact number of different students who were in school during the period covered by this study: consequently, the percentage of the total student body who were mentioned by faculty could not be accurately determined. In order to find the approximate percentage of students who were mentioned by faculty one or more times, all students who were in school during the fall quarter, 1936, and who had had classes in this institution before the fall quarter of 1936, were listed. There were 369 in this group. Of the 369, 157, that is forty-two per cent, had been mentioned one or more times. Of this group of 369, fifty-one were mentioned three or more times. This represents fourteen per cent of the total group. Apparently this method will identify about fourteen per cent of the student body who may be in need of guidance or elimination from the teacher training courses.

### SCHOLARSHIP

The mean grade point average of the "mentioned" group was 1.61.* The standard deviation was .59. During the fall quarter, 1934, the mean

* A is given a weight of 4, B a weight of 3, C a weight of 2, D a weight of 1 and F a weight of 0.

grade point average of a representative sampling of eighty-four college students was 2.46; the standard deviation was .59. The difference between the mean grade point averages of the two groups was .85. The standard error of this difference was .078; consequently, the difference was almost eleven times the standard error of the difference. Statistically, there is little doubt that the scholarship of those students who are mentioned three times or more by faculty is inferior to that of a typical group of college students. Apparently the faculty was not able to disregard scholarship in selecting students, or more probably, scholarship is an intrinsic attribute of the desirable teacher.

### COLLEGE APTITUDE

The American Council Psychological Examination had been taken by all but four of the 143 students. The "mentioned" group was reliably inferior in aptitude to the total group of students in school in the fall quarter, 1936. The difference was six times the standard error of the difference.

### GRADUATION PROBABILITIES

Forty-one per cent of the "mentioned" group were graduated. Approximately thirty-eight per cent of the typical group of entering freshmen are graduated. The percentage from the "mentioned" group is probably not entirely comparable with the percentage from an entering group in that only students who have stayed in college long enough to be mentioned three times are included.

### STUDENT TEACHING

Sixty-six of the 143 students had had the course in student teaching. Twenty per cent of the sixty-six received a failing grade and twenty per cent received a grade of D. Between 1925 and 1929 only eight per cent of all student teaching grades were D or F and between 1932 and 1936 nine per cent were D or F. The difference in the percentage of D and F grades given the "mentioned" group and the percentage given all students between 1925 and 1929 was reliable for it was five times its standard error. No student in the "mentioned" group received an A in student teaching although approximately twelve per cent of student teaching grades are usually A. It may be safely concluded that in the opinion of the critic teachers the "mentioned" group was not as satisfactory as a random sample of student teach-

ers. It should be remembered that none of the critic teachers knew the identity of the members of the "mentioned" group.

## THE SEARCH FOR A TEACHING POSITION

It is difficult from the data at hand to draw a definite conclusion as to the frequency with which the students of the "mentioned" group obtain positions as compared with a typical group of students. Of 124 students who were graduated in 1930, seventy-seven per cent had received at least one position in teaching by 1936. By the fall of 1939 sixty-eight per cent of the fifty-nine graduates of the "mentioned" group had held or been appointed to a teaching position. Although this percentage is slightly lower than the seventy-seven per cent of the 1930 group, the difference between the two groups is not statistically significant. Moreover, it is doubtful if employment conditions during the two periods were comparable.

## REPORTS FROM THE FIELD

Field ratings have been received for thirty-five of the forty men and women who have held or been appointed to a position. Of the thirty-five field ratings, twelve were above the mean of a random sample of field ratings. The difference between the mean rating of the "mentioned" group and the mean rating of a random sample of graduates was 1.7 times its standard error. The reliability of the field rating was .6.

By the fall of 1939 there were twenty-three women and seventeen men who had held or been appointed to a teaching position. Of the twenty-three women only seven held a teaching position during the 1939–40 school year, but of the seventeen men, sixteen held positions during this year. Thus, relatively few of the women were teaching three or four years after graduation, but practically all men who were able to obtain positions were still teaching. Apparently many men of questionable teaching ability as judged by the teacher training institution and by the field are, nevertheless, able to remain in teaching. The teaching profession and the children of the state would benefit if these men and women had not been given teaching certificates.

It is believed that the method of conducting this study has given a fair chance to the people identified as least desirable prospective teachers to show whether or not they would become acceptable teachers. Such a high

percentage failed to meet the standards set for good teaching that this method of selecting such students may be considered valid. It is especially to be recommended because students who are likely to fail in teaching may be identified very early—usually during their first year in college.

## SUMMARY

The following summary gives the most important results of the study and answers the questions which were raised at the beginning of the article.

1. Each faculty member was asked to name one student for each fifteen in his class who, in his opinion, would be least desirable as a teacher of elementary school children.
2. All students mentioned three or more times were selected for this study. The group contained 143 students.
3. The "mentioned" group was reliably inferior to the typical student in scholarship.
4. The "mentioned" group was reliably inferior to the typical student in college aptitude as measured by the American Council Psychological examination.
5. This group was reliably inferior to the typical student in teaching ability as measured by first student teaching grade.
6. The evidence was inconclusive that those students in the "mentioned" group who were graduated secured teaching positions less frequently than typical graduates.
7. The "mentioned" group received lower field ratings than a presumably random sample of typical graduates but the difference was not statistically significant. Unreliability of the field ratings and the relatively small number of field ratings for the "mentioned" group may account for this lack of statistical significance.
8. Only twenty-one per cent of the female graduates of the "mentioned" group were found to be teaching four years after graduation.
9. Sixty-seven per cent of the male graduates of the "mentioned" group were found to be teaching four years after graduation.
10. It is believed that this method of identifying students who will be the least desirable teachers has been shown to be valid.

# PUPIL EVALUATION OF PRACTICE TEACHING

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*Editor's note:* Much has been written recently on pupil evaluation of teachers. The author suggests an application of this idea to the evaluation of student teachers.

THE evaluation of practice teaching is a difficult problem complicated by the complexity of the teaching situation, the interplay of varying personalities and the diversity of opinion as to what constitutes good teaching. Operating under the assumption that pupil opinions are valuable as a criterion of teaching efficiency, an attempt has been made in this study to apply this technique to the evaluation and the improvement of student teachers.

In applying this technique, a check list of attributes of good teachers was first constructed in two parts. In the preparation of the list of attributes the opinions of high school pupils, the suggestions of practice teachers, and the ideas of eminant authorities were all considered. In part I the extent of the possession of any trait by an individual was indicated on a five point scale ranging from complete possession to no possession. In part II a list of descriptive words or phrases, favorable and others unfavorable, was employed to get other evaluations. The extent of the exhibition of any trait was indicated on a three point scale ranging from habitual to infrequent display of the trait. A numerical score of arbitrary values was assigned to each of the scales. To obtain this numerical score the total of the undesirable traits checked was subtracted from the total of the desirable traits checked.

In obtaining pupil evaluations the following procedure was used:

1. After each practice teacher had taught for several days and when the unit of work was completed, the pupils were asked to make an evaluation of the teacher's work.
2. Before distributing the evaluation instrument, the pupils were informed as to the nature and purpose of the experiment and a request was made for their serious and whole hearted cooperation. Since the papers were anonymous, the pupils could react as they saw fit.
3. When the evaluation was completed, the papers were collected and summarized in the following manner:
    a. The items checked by more than a third of the class were first listed.

b. The highest, lowest, and range of scores were then noted.
c. The average of the numerical scores for each student teacher was finally computed and compared with other evaluative criteria.

From an application of this technique in one class for a semester, it seemed that:

1. There was a close agreement between the pupil evaluations and those of the supervising teacher.
2. The student teachers felt that they derived considerable benefit from their analysis of the pupil evaluations.
3. The pupils enjoyed the recognition of their place in the evaluation procedure.

Profiting by the experience gained in the first trial, the instrument was revised, and enlarged, and an improved scoring technique devised. The student teachers in three classes were then evaluated by the students in their respective classes through use of this new instrument. How closely the pupil evaluations follow those of the supervisor may be seen in the data gathered during two semesters given below (Table I).

It is evident from these data that there is a very close agreement between the opinion of pupils and the judgment of the supervising teacher.

From these preliminary two trials of the technique of pupil evaluation of practice teaching, the following inferences would seem warranted:

A. Supervisory rating may be made more objective by the use of pupil ratings.
B. Student teachers are pleased to have the evaluation of pupils of their efforts.
C. The value of this procedure seems to lie in the detailed inventory of the student teacher's strengths and weaknesses.
D. Some classes are consistently more lenient than others.
E. Individuals receiving a high or low average score tend to have a smaller range of scores than those whose average scores fall in the middle of the group. That is: the pupils agree closely in their judgments of the best and poorest practice teachers but vary widely in their judgments of the middle group.
F. In the few cases where the date is available the pupil judgments show a close agreement with the results of the application of the Barr–Harris Teaching Scale.

TABLE I

PUPIL AND SUPERVISORY RATINGS OF STUDENT TEACHERS

The student teachers are designated by their initials and are placed in the table according to the numerical average of the scores on the pupil evaluations. The letter grade in parentheses is the grade assigned by the supervisor, previous to the application of the evaluation technique.

| Average Score | Section A | Section B | Section C |
|---|---|---|---|
| 54 | | | E. M. (A) |
| 53 | | | |
| 52 | | | |
| 51 | | | |
| 50 | | | A. W. (A) |
| 49 | | | |
| 48 | | | G. S. (A) |
| 47 | A. W. (A) | | A. D. (A) |
| 46 | | | |
| 45 | | | |
| 44 | | M. M. (A) | P. K. (A) |
| 43 | | | |
| 42 | | A. F. (A) | |
| 41 | | | A. H. (A—) |
| 40 | | | |
| 39 | | | |
| 38 | | L. S. (A) | |
| 37 | P. K. (A) | | |
| 36 | | A. J. (A—) | L. A. (B+) |
| 35 | B. W. (A) | | |
| 34 | | | |
| 33 | | | |
| 32 | | T. B. (A—); M. B. (B+) | |
| 31 | V. B. (B) | | |
| 30 | J. L. (B) | | |
| 29 | | J. F. (B) | |
| 28 | | | |
| 27 | M. H. (B) | | |
| 26 | M. J. (B) | V. N., S. S. (B—) | |
| 25 | | | |
| 24 | L. K. (B) | | |
| 23 | | | |
| 22 | | | G. S. (B—) |
| 21 | | | G. R. (B—) |
| 20 | M. P. (B—) | | |
| 19 | D. K. (B—) | | |

The problem has not been solved. It is hoped, however, that some progress has been made. The scale and the scoring technique need to be refined. More time will be required for a study of the consistency of pupil judgments as well as an analysis of the reliability of the test itself. A copy of the scale is reproduced in order that the help and criticisms of others may be secured.

# EVALUATION OF PRACTICE TEACHING

## Pupil Check List

### PART I

Name of Person Evaluated _____

### GENERAL CHARACTERISTICS

In the column at the left are listed a number of characteristics which are considered important attributes of a good teacher. Consider the person carefully in the light of these traits and place a check in the right hand column which you believe most nearly describes the extent to which the trait is shown by the individual.

| TRAIT | Always | Most of the time | Sometimes | Rarely | Never |
|---|---|---|---|---|---|
| APPEARANCE: | | | | | |
| 1. Dresses attractively and in good taste | | | | | |
| 2. Dresses appropriately and neatly | | | | | |
| 3. Keeps well groomed or moderate make-up | | | | | |
| 4. Carries self well and shows good posture | | | | | |
| PROFESSIONAL MANNER: | | | | | |
| 1. Is dignified, courteous, considerate | | | | | |
| 2. Shows good self-control over emotions and temper | | | | | |
| 3. Easily leads the class | | | | | |
| 4. Can easily & fluently express himself | | | | | |
| 5. Shows insight into high school pupils | | | | | |
| 6. Knows relationship of subject to life | | | | | |
| PERSONAL QUALITIES: | | | | | |
| 1. Is mentally alert | | | | | |
| 2. Is forceful | | | | | |
| 3. Is pleasant and agreeable | | | | | |
| 4. Appears healthy and vigorous | | | | | |
| 5. Has a sense of humor | | | | | |
| 6. Has a wholesome outlook on life | | | | | |
| 7. Is sincere in speech and actions | | | | | |
| 8. Sets a desirable example | | | | | |
| 9. Is upright and honest | | | | | |
| TEACHING METHOD: | | | | | |
| 1. Secures full student cooperation in class activities | | | | | |
| 2. Shows evidence of good preparation | | | | | |
| 3. Arouses interest in the topic | | | | | |
| 4. Remembers level of student comprehension | | | | | |
| 5. Provides opportunity for all to participate | | | | | |
| 6. Is systematic in thought and action | | | | | |
| 7. Provides a suitable environment for learning | | | | | |
| 8. Discovers individual difficulties | | | | | |
| COMMAND OF SUBJECT: | | | | | |
| 1. Is well-informed on specific areas | | | | | |
| 2. Is well-informed on related areas | | | | | |
| 3. Is interested in subject | | | | | |
| 4. Can explain in a clear and understandable way | | | | | |
| 5. Can relate subject to practical situation | | | | | |

## PART II

### SPECIAL QUALITIES

The following words or phrases are sometimes used to describe the personality of an individual. Place a check in the column which indicates the degree to which this trait is possessed or shown by the participator you are evaluating.

| TRAIT | Always exhibits this quality | Usually exhibits this quality | Rarely exhibits this quality |
|---|---|---|---|
| Adaptable | | | |
| Alert | | | |
| Appreciative | | | |
| Considerate | | | |
| Cooperative | | | |
| Courteous | | | |
| Dignified | | | |
| Earnest | | | |
| Emotionally balanced | | | |
| Enthusiastic | | | |
| Fluent | | | |
| Forceful | | | |
| Friendly | | | |
| Helpful | | | |
| Impartial | | | |
| Industrious | | | |
| Interesting | | | |
| Leads group | | | |
| Modest | | | |
| Open-minded | | | |
| Orderly in habits | | | |
| Pleasing (in manner) | | | |
| Punctual | | | |
| Reasonable | | | |
| Resourceful | | | |
| Sympathetic | | | |
| Systematic | | | |
| Tolerant | | | |
| Vivacious | | | |
| Well organized | | | |
| Aloof | | | |
| Bluffer | | | |
| Bored | | | |
| Conceited | | | |
| Crabby | | | |
| Dictatorial | | | |
| Egotistical | | | |
| Harsh | | | |
| Ill at ease | | | |
| Impatient | | | |
| Inconsiderate | | | |
| Insincere | | | |
| Moody | | | |
| Nervous | | | |
| Partial | | | |
| Sarcastic | | | |
| Snooty | | | |
| Tactless | | | |
| Timid (shy) | | | |

# EDITORIAL

## HOW WRONG ARE EDUCATORS?

THE war is producing critical needs for specialists of many kinds. We are in sympathy with the various organized groups who are striving to stimulate interest in the immediate training of the needed specialists. The educational system of the country will respond to these needs as well as it can. But some of the criticisms and charges arising from special fields are based on long-time ignorance and narrowness of vision. It would seem well to recognize and meet such charges even while we endeavor to co-operate with the groups from which they arise.

Physicists are particularly needed at this time. "There has never been a time when physicists have been in greater demand or when it was more essential to find among scientists men of individual brilliance and ability."[1] Writers in this field, following the usual weaknesses of humanity, may cast about for some group to blame; and professional educators are a very likely group. Scientists have a traditional disdain for the things they think Education Departments are mostly concerned with; and their lack of acquaintance with education in the large and with Education Departments in particular leaves them relatively unrestricted in their imagination and unhampered in their feeling that if it were not for professional educators the nation would be in a better position at the present time.

Two editorial writers may be noted in point. Harnwell, in the *Review of Scientific Instruments,* after calling attention to unsatisfactory conditions, added:

"The causes of this lamentable situation are deeply rooted in the current trends of educational philosophy. . . . It is unfortunate that the professional pedagogic groups who are in current charge of educational trends are in general ill informed of the importance of the physical sciences, on the ends to be striven for, and the proper means to be employed."[2]

[1] Harnwell, Gaylord P. "The Golden Eggs," *Review of Scientific Instruments,* XII (December, 1941), 571.
[2] *Ibid.*

Schlink, picking up the cue, editorialized at some length on the ills of the public school system and referred to the above statement as "going to the very root of our national educational malady." He continued:

"The justice of this criticism cannot be denied, for in recent years newspapers and magazines have almost daily recorded how professional educators in the main have given their major conferences and their greatest efforts and enthusiasm to explanations of the relationships of the social sciences and the problems of sociology, statistics, government, and welfare. They have permitted this expansion and overgrowth of social science interests to take place to an extent which amounts to an almost total ignoring of the fundamental place and importance of the natural sciences and mechanic arts and skills.

"The percentage of high school pupils studying physics is now only about a third what it was in 1910, and the number is still decreasing. . . . We are not only teaching elementary physics to fewer pupils but we are teaching those few more and more superficially. . . . If our educational methods were adapted to our national needs, and teachers as well qualified in the sciences as they should be, the number of highly trained experts qualified to search for and apply new knowledge in the exact sciences and engineering arts would be as great as the present situation calls for. . . .

"A leader among American scientists recently referred to British opinion that 100 physicists might be as important to the safety of their nation as a million men in the army. . . . It is thought that one development of scientific defensive warfare may have saved Britain from German invasion in the autumn of 1940 (by eliminating the factor of surprise)."[3]

These and certain other presentations in the editorials are as interesting in their facts and implications as they are untrue. The present writer is somewhat loath to join issue on the matter because he admires science, respects the role of the scientist, and appreciates particularly the work of Consumers' Research, Inc. But the cause of both scientists and educators may be helped by facing some of these myths which scientists seem willing to accept for facts, and expressing clearly our differing points of view. The notions represented by the quotations above are open to four serious criticisms, some purely factual, and some judgmental.

The idea that one outstanding physicist may be worth 10,000 soldiers is more striking than persuasive. It is probably an understatement. As an extreme, it could be multiplied. But as a point against the importance of

[3] Schlink, F. J. "Off the Editor's Chest," *Consumers' Research Bulletin*, IX (February, 1942), 2, 25, 26.

social scientists it is unimpressive for it offers no reasonable basis for comparison. Can one calculate how many soldiers would now be unnecessary if the foreign policy advocated by Anthony Eden had been followed for the past ten years by England? Is it possible that a single dynamic individual with a realistic understanding of human nature and international trends, in the seat of power, can do as much to avoid the necessity for many millions of soldiers as a physicist can do to aid those soldiers after a war has started?

In the area of imaginative magnitudes one may wish to contemplate the possible effect of the entry of the United States into the League of Nations—and the price we and the world are now paying for the obstinacy, short-sightedness, and narrow partisanship of the "little group of wilful men"[4] who, with some others, harried, opposed, and blocked the long-range, constructive policies of the President[5] and made it impossible in the post-war era for the United States to accept the role of a responsible power in working for and implementing a well-organized scheme for world peace. Or one may consider what the effect might have been of a small number of men in Germany, Japan, and Italy—say no more than the number of physicists in those countries—who, in positions of governmental leadership, might have had ideals tempered by considerations of a humane world instead of dominated by aggrandizing nationalism, and who might some years back have established population policies for their countries[6] which would be adapted to the economic conditions of the land[7] instead of being adapted calculatingly to produce such population pressures that the people would be forced to expand their boundaries and would fight to do so.[8]

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[4] Daniels, Josephus. *The Life of Woodrow Wilson, 1856–1924.* Philadelphia: John C. Winston Co., 1924. P. 263.

[5] Dodd, William E. *Woodrow Wilson and His Work.* Garden City, N. Y.: Doubleday, Page & Co., 1921. Chapters XIV–XVIII.

[6] "Japanese Population Policy." *Population Index,* VII (October, 1941), 264–267.

[7] U. S. National Resources Committee. *Problems of a Changing Population.* Report of the Committee on Population Problems. Washington, D. C.: Government Printing Office, 1938. Pp. 306.

[8] Patterson, Ernest M., Editor. "Present International Tensions." *Annals of the American Academy of Political and Social Sciences,* CXCVIII (July, 1938), 1–253.

Thompson, Warren S. *Population Problems.* New York: McGraw-Hill Book Co., 2d ed., 1935. Pp. 500.

Thompson, Warren S. *Danger Spots in World Population.* New York: A. A. Knopf, 1929. Pp. 343.

East, Edward M. *Mankind at the Crossroads.* New York: C. Scribner's Sons, 1923. Pp. 360.

An abandonment by such leaders of overt policies of overpopulation would have left this war largely without foundation, and might have avoided it entirely.

Yes, we need physical scientists; but not more than we need social scientists. Man for man, one cannot say that a physical scientist, in the right place at the right time and with the proper background, can do more for humanity than can a social scientist under equally favorable conditions. Both have their sphere of service; it ill behooves either to belittle the other.

A second point of weakness in the charges of the two editorial writers cited lies in their figures. Schlink in particular handles his statistics badly. It is usually misleading to mix percents and absolute numbers in a single sentence. In the statements quoted the writer apparently misled himself. The truth of the matter is that (according to the latest national published figures which the present writer has seen)[9] the number of physics students in public high schools has increased steadily over every period for which they have been reported by the U. S. Office of Education since 1890. In 1934, when the percent of public high school students enrolled in physics was only 6.3 (as cited by Harnwell), there were over two and one-half times as many students taking physics as in the "good old days" of 1910 when the percent was 14.6. Further, in the period from 1928 to 1934 (the last one reported on) there was the greatest growth in number of students taking physics for any similar period since 1890. The number of high school pupils taking physics has been increasing since 1910 twice as fast as the total population has been growing. The figures further show that of all the pupils who go through high school about 35% (in 1934) study physics.[10]

Such figures ought to please even the physicists. They do not afford evidence that "the number is still decreasing." Such an idea appears to be a careless assertion made by a trained scientist who was misled by his own neglect of simple arithmetic because he was paying more attention to his

[9] U. S. Office of Education, *Biennial Survey of Education, 1934–1936*, Volume II. Office of Education Bulletin 1937, No. 2. Washington, D. C.: Government Printing Office, 1939.

The figures herein cited are taken from Chapter I, "Statistical Summary of Education, 1935–36," Table 16, p. 20, and Table 7, p. 8.

[10] This percent utilizes the number of students enrolled in the twelfth grade as a base. (Table 7, p. 8.) Either the numerator or denominator has to be corrected for under-reporting in Table 16, p. 20, as indicated in the table. While all of the figures cited are for public high schools, adding in the figures for private high schools (Table 19, p. 24) would leave the general statements unchanged.

too-readily-accepted belief than he was to his scientific training. Apparently even scientists are easy prey for rumors—and outside of their legitimate domain, use a general notion as a basis for accepting poorly examined facts, rather than using facts as a basis for arriving at a conclusion. Educators may be blamed for having some wrong notions, but they are at least scientific enough not to ignore readily available facts just because they hold a certain bias which they wish to air.

The charge that the social science fields, under the sponsorship of the professional educators, have been robbing the physicists is equally ridiculous when viewed in the light of the facts. Over the same period of comparison, 1910 to 1934, the percent of students taking history and all other social science courses showed a slight decrease. The physics writers[11] appear to exhibit something of a spoiled-child complex: parents who distribute their attention equally among the children are blamed by the complainant because they do not show partiality to him.

The third area of criticism by the scientists—and the third weakness in their position—lies in their charge that we do not have more imminent scientists because of faulty education. This concept is expanded at some length by both writers, and has at least three elements. The first has to do with teachers. That many high-school teachers of physics are not well prepared, have to divide their time between several diverse fields of work, do not have sufficient equipment, and fail to stimulate their students, are conditions[12] which we all—educators and physicists alike—regret. They are in the main practical difficulties rather than ideational ones. They should be remedied as quickly as circumstances will permit. No one condones poor teaching.

The second element in the charge of faulty education lies somewhat beneath the surface. It is the implication that one can, by teaching, create imminent scientists. We should be explicit on the point that good teaching and a favorable environment are, in most cases, essential conditions; but

[11] Harnwell wrote: "Finally, the trend toward social studies and the resulting limitations imposed on the study of the sciences by requirements in the social field present an added handicap." *Loc. cit.*, p. 572.

[12] Trytten, Merriam H. "Study of Secondary School Physics," *American Journal of Physics*, VIII (February, 1940), 54–56.

Trytten, Merriam H., and Leach, James M. "Study of Secondary School Physics in Pennsylvania," *American Journal of Physics*, IX (April, 1941), 96–101.

Leach, James M. *Status of Physics Teaching in Pennsylvania High Schools*. Master's thesis. Durham, N. C.: Duke University, 1940. Pp. 151.

neither physicists nor educators would grant that they were sufficient. A high quality of native ability is also required. This means a high degree of selection. How high is indicated by Harnwell when he says: "In the entire country there are less than 5000 trained physicists."[13] As he points out, this is fewer than one in three thousand of the population; one in 30,000 would be closer. It should be perfectly clear therefore that in a situation where the high school enrolment is growing sixteen times as rapidly as the total population[14] the high degree of selection formerly obtaining for the high-school population is no longer typical, the average academic ability has dropped, and any field which is open to only a select few must expect to find the percent of students taking its work drop also. Yet this simple sort of arithmetic does not appear to be clear to editorial writing scientists. They talk of 1934, when 64% of the children aged 14 to 17 were in high schools, as though times had not changed since 1880, when only about 3% of the children went to high school, or even since 1910, when 16.6% of the children were in high school.[15] It would seem that the explanation of the moderate increase in physics enrolments would be sought in some such conditions, rather than by charging misdirected guidance, poor teaching, and erroneous ideas of education—with the implicit assumption that any and all pupils could, by proper education, be made into good physicists.

The third element in the charge against educators is purely ideational—somewhat fanciful, somewhat philosophical. It is fanciful when it holds:

"The policy of certain schools of education would appear to be that a familiarity with their instructional technique renders a grasp of the subject matter unnecessary, and the quality of their output reflects this irrational point of view."[16]

Schlink also expresses his disdain for concern over methods, mentioning the need for content. Such criticisms are pure fancy, for no Department of

[13] Harnwell, Gaylord P. "What Shall We Do for Physicists?" *Review of Scientific Instruments*, XII (May, 1941), 247.

[14] Over a fifty-year period, from 1880 to 1930, the total population increased about two and one-half times, and the high-school enrolment increased 40 times. For 1880 enrolment figures: U. S. Office of Education, *Biennial Survey of Education, 1934–1936*, Volume II. Bulletin 1937, No. 2. Washington, D. C.: Government Printing Office, 1939. Chapter II, "Statistics of State School Systems, 1935–36," Table 1, p. 55.

[15] U. S. Office of Education, *Biennial Survey of Education, 1934–1936*, Volume I. Bulletin 1937, No. 2. Washington, D. C.: Government Printing Office, 1940. Chapter II, "Trends in Secondary Education," p. 1.

[16] Harnwell, *op. cit.*, p. 571.

Education holds the views ascribed, nor acts accordingly. Teachers colleges, like physicists, wish all their students were outstandingly good; and they wish that the students would make up their minds what they intend doing early enough in their college work so that they could specialize thoroughly in some field; and then they wish that the students could be placed in schools where they would have opportunity to teach in the field of their specialty. These objectives are not realized because of practical factors. It is idle to wish that humanity had ten or fifty percent more latent ability than it has, or to wish that the world were altogether different from what it is. When critics ascribe the consequences in question to the motives or attitudes of Departments of Education, rather than to practical conditions, the matter takes on somewhat the air of maliciousness.

The most fundamental difference of opinion arises in connection with the curriculum. I regard this as in the nature of a philosophical difference, and it cannot be settled by brief discussion so that there is little value in more than mentioning it. Both editorial writers deplore the "soft education," the "scrambling and emasculation" of the sciences, the meaningless offerings in general science. They ignore completely the enrolment facts cited above, and their significance. They seem to think that teaching a stiff course will make all students learn more—whereas in reality it means that most students learn little or nothing, and that the majority of students will rapidly leave school because the school is offering them nothing that fits in with their past, their present abilities, or their future plans. The efforts that have been made in the direction of popularizing high school subjects are apparently meeting with public approval, judging by the increasing proportion of youth who find something in high school that seems to be of worth to them. If competent physicists do not understand the purpose and value of such instruction it is probably because they are so far away from the outlook of the common person that they cannot appreciate such values. There should be courses which would awaken and stimulate sharp minds, yes; but while the number of new physicists needed each year is some six or seven hundred (Harnwell, *op. cit.*, p. 249), the public high schools have to prepare each year some two million youth for other purposes—to vote, to enter into family life, to earn livings at all sorts of occupations, and to find a general adjustment to the conditions of life so that they do not become antisocial. In the light of the total job of the high schools for American civilization the complaints of any one professional group pale considerably.

At the outset I referred to a fourth serious criticism of the editorials cited. It is that scientists—insofar as the writers are representative—seem to be unappreciative of, perhaps thoughtless of, the basic facts concerning the kind of world in which we live. They seem to take it for granted that it is a physical world, and that physical science is in and of itself important. But the importance of science depends, and always has depended, upon the values which a given society attaches to it.[17] Throughout the history of mankind the technical worker has been subordinate to the policy maker.[18] The professional scientist works at the request of, or with the consent of, those who control the economic, political, social, and religious aspects of his society. When the social conditions supporting science break down, science starves. It is this *social* world which makes it possible or impossible for the scientist to work; and out of pure interest in his science, the scientist owes some attention to, and some respect for, the social problems of the world about him. He can ill afford to criticize serious efforts to produce social scientists in large numbers who may, if they are sufficiently competent, bring about a world wherein physical science may be called upon to serve mankind constructively — and not, as at the present time, in large part destructively.

DOUGLAS E. SCATES.

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[17] Oriental civilizations characteristically have not espoused physical and chemical sciences, and commonly have not wanted the products of such sciences. *Publications of the American Statistical Association,* XIV (March, 1915), 352.

[18] There is some evidence that technologists will more frequently be included in policy making councils in the future. For example: "A Technological High Command," *Fortune,* XXV (April, 1942), 63–67.

# REVIEWS

**Address all communications relative to book reviews to Editor Kai Jensen, University of Wisconsin, Madison, Wisconsin.**

KANDEL, I. L. *The End of an Era.* Educational Yearbook of the International Institute of Teachers College, Columbia University, 1941. New York: Bureau of Publications, Teachers College, Columbia University, 1941. Pp. xviii + 393. $3.70.

*The End of an Era* is the eighteenth of a distinguished series of yearbooks on problems of comparative education. World conditions during the past year made it impossible to secure foreign contributions of the character desired in time to meet the publication schedule of the yearbook. Therefore, to maintain the continuity of the series, the 1941 volume was written by the editor, who is our ranking scholar in comparative education.

The new yearbook characterizes the educational thought and practice of the period between two world wars and in a sense is a synthesis of the issues covered in the seventeen preceding volumes. It points toward the problems that lie ahead in the work of educational and social reconstruction. The main issue in American democracy is to rediscover a faith based upon recognition of the worth of human beings—to turn again to cultural and spiritual values away from economic and political determinism. The author, one of the keenest critics of the extremes of progressive education, maintains that it has been found imperative in American education to stem the cult of pure individualism, which has opposed any indoctrination, even of ideas and ideals essential to social and moral stability.

A series of chapters analyzes problems of education in relation to: modern thought, politics, administration, the child, the adolescent, preparation of teachers, and reconstruction. The countries represented in the discussions and illustrations are England, France, Germany, Italy, Russia, and the United States. Frequent references are made to the foreign literature and to the reports of deliberative committees and national commissions in this country. Two unusually extensive quotations are used: a statement by Thomas Mann (eleven pages) and a bulletin, *Democracy and Education in the Current Crisis,* by the faculty of Teachers College, Columbia University (sixteen pages).

It is hoped that the distribution of the yearbook series and of the 1941 volume in particular will be such as to justify future annual publication. This scholarly synthesis of the educational issues of the past score of years provides clear-cut documentation for the reconstruction of education, which must be an integral part of the war effort and of the peace to come. Without the type of education recommended, democracy cannot endure and cannot even defend itself in modern war.

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KENT, SHERMAN. *Writing History.* New York: F. S. Crofts and Co., 1941. Pp. xi + 136. $1.00.

*Writing History* offers advice to the undergraduate senior and beginning graduate student in history, with respect to the preparation of the undergraduate essay and the graduate thesis. The opening chapter briefly characterizes history in terms of uses, evidences or sources, criticism of evidence, and the writing of the narrative. Succeeding chapters or sections outline in some detail criteria for selection and delimitation of the problem, bibliographical sources, reading and note-taking techniques, formulation of hypotheses, organization and outlining of materials, the art of writing, English usage, form for citations and references, a bibliographical note on historiography, and the making of an index.

The author might have used subheadings to advantage in his first five chapters, and in so doing have applied a principle recommended to beginners in the art of thesis and essay writing. While the book is intended for majors in the field of history, much of the advice is sound for workers in education and for seniors and graduate students in general. The style is clear, interesting, and forceful, which will guarantee the book a favorable reception from the undergraduate, and in no way lessen its attractiveness to the graduate student.

CARTER V. GOOD.
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BROWN, CLARA M. *Evaluation and Investigation in Home Economics.* New York: F. S. Crofts and Co., 1941. Pp. xviii + 461. $3.50.

It was to be expected that the earlier books on research methods for teachers and students of education would deal with general procedures, without detailed applications to fields of teaching specialization or to subdivisions of education. More recently specialized treatments of investigational techniques have appeared in such areas as vocational education, business education, physical and health education, and now home economics. Part I of the book under review is devoted to instruments of appraisal in home economics; this section is the chief contribution. The various types of tests are described in detail and illustrated at length in the field of home economics.

Part II covers the topics usually treated in courses on statistics and on research methods or principles of thesis writing, including: formulation of the problem, methods for collecting data, statistical analysis of data, tabular and graphic presentation of data, and the writing of the research report. It has become the practice of late years to devote separate volumes to: (1) tests and measurements, (2) statistical analysis, and (3) research methods and principles of thesis writing. Therefore, it is not surprising that, in attempting to cover all phases of research methodology in one book, the treatment of certain major topics is very sketchy, as indicated by the following page allotments: interview, 3; library usage, 2; historical method, ½; case study, ½; and genetic method, 5 lines. The absence of adequate discussions of interview, case, and genetic or developmental techniques is especially noticeable in a book concerned with an area where problems of home and family living loom so large.

Without question the book will prove valuable to senior college and graduate students in home economics, as well as to teachers in this field. Many of the principles of evaluation and the illustrations

of appraisal instruments have possibilities for an even wider field of usefulness.

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BUROS, OSCAR K., Editor. *The Second Yearbook of Research and Statistical Methodology Books and Reviews.* Highland Park, New Jersey: Gryphon Press, 1941. Pp. xx + 383. $5.00.

This series of yearbooks parallels the *Mental Measurements Yearbooks,* under the same editorship. The yearbook under review is the second in its series, the first having covered the book reviews of 1933–1938. The second volume is greatly enlarged, including 1652 review excerpts from 283 journals and representing 359 books published in 1933 or later. These books deal with research methodology, scientific method, statistical method, collective biographies of scientists, and general histories of science. In addition to the excerpts from reviews, which are, of course, the major part of the yearbook, there are included indexes of periodicals, publishers, titles, names, and fields. The volume is exceptionally attractive in format.

The book review excerpts have been chosen with discrimination, so as to represent evaluative statements, although it must be admitted that any evaluation is no better than the person who wrote it. The volume is a valuable guide for use in selection and purchase of books, in evaluation of research literature in a wide range of fields, and in improvement of the quality of book reviews themselves. In any work of this magnitude omissions are inevitable; to cite only two examples, Barnes' *History of Historical Writing,* 1937, is represented, but Shotwell's *History of History,* 1939, is not, and Gesell's recent books on genetic, developmental, and growth techniques are missing.

Present plans are to publish the volumes of the series at intervals of two years. Contemplated but not promised expansions of this bibliographic service include listing of foreign-language books on research methods along with excerpts from reviews in English-language journals, noncritical abstracts of periodical literature on research and statistical methodology, and original criticisms of articles on scientific methodology in the periodical literature. These undertakings would prove expensive in time, effort, and money, but would be as useful contributions as the two yearbook series that already have become a reality.

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GOLDSTEIN, HARRY. *Reading and Listening Comprehension.* Contributions to Education, No. 821. New York: Bureau of Publications, Teachers College, Columbia University, 1940. Pp. 69. $2.00.

The educational significance of listening comprehension is receiving increased recognition. Thus the relative efficiency of reading and listening comprehension has important implications. In the present well planned investigation of this problem rigid controls were maintained. The basic problem "was to compare reading and listening comprehension at various rates of presentation." The auditory material was derived from test material on phonograph records. The visual text was presented by motion film projection. The author recognized that neither of these was a natural situation and that the visual stimuli were highly

artificial since the lines of print were moving upward across the projection field. But the timing advantages gained by the technique employed were considered essential. A group of 280 adult subjects was measured.

A few of the significant findings and conclusions may be cited: (1) Listening comprehension in general tended to be superior to reading comprehension. This superiority was more marked for the easy than for the difficult materials, but declined with the increased rate of presentation. (2) The relative superiority of listening comprehension was more prominent for the less intelligent subjects and for the slow readers. (3) The kind of comprehension found most efficient was to some extent a function of the individual tested. Unfortunately the author did not determine the relation of individual preference for kind of situation and amount of reading habitually done to listening and reading comprehension scores. (4) The high correlation (.78) between listening and reading comprehension is considered to indicate the importance of central over peripheral activity. This supports the view, frequently expressed by the reviewer, that eye movement patterns are symptomatic rather than causal factors in conditioning reading proficiency. (5) Suggestions on the implications of the results for educational practice are pertinent.

The author's self criticism is to be commended. The report is an important contribution. Nevertheless, it must be recognized that since the listening and reading situations were artificial, a final answer concerning relative efficiency of the two kinds of comprehension has not been achieved.

MILES A. TINKER.
*University of Minnesota*

ZELLER, DALE. ***The Relative Importance of Factors of Interest in Reading Materials for Junior High School Pupils.*** Contributions to Education, No. 841. New York: Bureau of Publications, Teachers College, Columbia University, 1941. Pp. viii + 89. $1.60.

Perhaps nothing contributes more to the development of reading proficiency than extensive reading. Making available reading materials which children enjoy is, therefore, of prime importance for pupils will read what interests them, other things being equal (difficulty of vocabulary, good writing, etc.). Children should read for desirable experience and this is found largely in their own interests. "Opportunity for children to choose reading materials that they like is the starting point for adult guidance of their experiences in reading and living through reading."

This investigation is concerned with the factors in reading materials that interest or repel junior high school pupils. A formula is developed for predicting the relative appeal of a book to boys or girls in this age range. Forty-eight books and eighteen factors of supposed appeal (as action, humor, mystery, surprise, love, etc.) were investigated in nine school systems. Significant sex differences appeared in the factors action, familiar experience, sincerity of writing, rivalry, adventure, combat, sensational situations, people, and appeal to the senses. When each factor which is supposed to influence these children's preferences in reading is freed (by partial correlation) from influence of the other factors, only two significant factors remain. Action and humor exert a favorable influence on choices of boys, while action has a negative and humor a positive effect on

choices of girls. For practical purposes, therefore, a reliable prediction of interest in the forty-eight books studied may be made in terms of action and humor alone.

Those who are concerned with furnishing reading materials for children in the early years of adolescence can profit from the implications of this study: (1) One should be able to evaluate books in terms of factors which influence reading interest. This implies familiarity with the contents. (2) There should be both boys' and girls' books available. The former should contain much action and humor; the latter, much humor but largely free from action. (3) The fact that recommended book lists are more popular than prescribed reading raises important questions. Books which are assigned because adults consider they have literary merit may have no appeal to the child.

The author's technique of evaluation is suggestive. Many educators, however, will hesitate to select reading material solely in terms of the action and humor factors. The validity of the method must necessarily await reaction of pupils to books selected by the prediction formula. Although a child may get desired experience by reading what interests him, the author admits that we do not yet know its effect on his behavior. The possibility of adult guidance in developing reading interests that will give "needed" experience to the child is not emphasized.

MILES A. TINKER.
*University of Minnesota*

MCCALLISTER, JAMES M. *Purposeful Reading in College.* New York: D. Appleton–Century Company, 1942. Pp. v + 170. $1.25.

It is now generally recognized that many students in college are handicapped by poor reading. This manual, intended for use in English classes, orientation classes and special reading classes, aims to improve reading by making reading habits and practices more purposeful. The author's plan is commendable. Improvement is to be achieved by emphasizing reading ability "through adjustments in the regular reading activities in which the college student engages."

Among the points given specific consideration are: (1) aids to concentration in reading, (2) adjusting rate of reading to a purpose, (3) how to read references rapidly, (4) increasing vocabulary through reading, (5) reading to apprehend relationships and (6) reading as a thinking process.

In the introductory chapter the need for improving reading ability is stressed. Included is an inventory designed to indicate a student's strength and weakness in reading habits. Each subsequent section (such as "reading to amplify understanding of a lecture") is introduced by explanations of the problem, of its importance, and of the method to be followed to improve reading efficiency. This is followed by an illustration showing applications of the technique. Suggestions for use of the method in regular class assignments are given. At the end of each section are exercises designed for weekly practice in measuring rate of reading and accuracy of comprehension. No attempt is made to furnish all reading material needed in the remedial work. Additional material is to be taken from texts, references, and other materials available to the students.

Two minor criticisms of the manual may be made: (1) Listing of references to supplementary practice reading materials suitable for college students would

be useful. Some remedial instructors may not wish to follow exactly the plan of the author. (2) Some of the illustrative examples could be more explicit. Although not a criticism, it should be noted that this is not a self-teaching manual. The instructor who uses it must have an adequate training in diagnostic and remedial reading.

MILES A. TINKER.
*University of Minnesota*

WAPLES, DOUGLAS; BERELSON, BERNARD; and BRADSHAW, FRANKLYN R. *What Reading Does to People.* Chicago: University of Chicago Press, 1940. Pp. xi + 222. $2.00.

This treatise, concerned with the social effects of reading, admittedly discusses the subject in highly general terms. The aim is to give a synthetic review of the pertinent literature and to indicate the next steps in research. Studying of isolated factors in relation to reading effects is considered unsatisfactory. To adequately determine the effects of reading it is necessary to consider four factors: (1) The preconditions of publications are important, for the character of a publication reflects the character of the people behind it. Social demands for publications are interpreted and met by writers and publishers. (2) Distribution of publications determines which ones are available to particular readers. Various factors such as concentration and wealth of populations affect distribution. (3) Perhaps the central factor in the effects of reading is the content of publications. (4) A knowledge of readers' predispositions is essential. These predispositions are personal conditions which derive from various aspects of the readers' total personality, i.e., age, sex, habitual attitudes, etc. "Readers' predispositions represent the least understood and probably the most important of the four major factors to which in combination we ascribe the social effects of reading."

In the section on "effects of reading" the authors cite evidence from a few group and case studies to illustrate the operation of the four major factors cited above. The outcome is somewhat meager. Adequate evaluation of the procedure, therefore, must await completion of the proposed three-year program of research.

The viewpoint in this book is that of social scientists with literary and cultural interests. Although couched in highly general terms, the analyses do yield a perspective which should prove valuable in future research. Nevertheless, the tendency to appeal to authority rather than fact will disturb the scientifically trained person. Adler, for example, is cited to justify a strictly normative approach to the definition of reading values.

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# Research Abstracts and Bibliographies

Address all communications relative to research abstracts and bibliographies to A. S. Barr, University of Wisconsin, Madison, Wisconsin.

## EDUCATIONAL ADMINISTRATION AND SUPERVISION

BALYEAT, F. A. "Trends in College-Entrance Offerings," *The School Review*, L (February, 1942), 121–127.

A comparison of college-entrance offerings of first semester freshmen enrolling at the University of Oklahoma in 1907, 1917, 1927, and 1937.

GARDNER, BURLEIGH B., GARDNER, MARY R., and LOEB, MARTIN B. "Social Status and Education in a Southern Community," *The School Review*, L (March, 1942), 179–191.

The upper-middle class determines the educational system in Old City in the South and the school helps perpetuate class and caste systems.

IRWIN, LESLIE W. and PAUSTIAN, JAMES W. "Safety Patrols in Elementary Schools," *Elementary School Journal*, XLII (February, 1942), 432–442.

A survey of practices in safety patrols reported by 167 representative elementary schools throughout the United States.

ROSTKER, LEON E. "A Method for Determining Criteria of Teaching Ability in Terms of Measurable Pupil Changes," *Educational Administration and Supervision*, XXVIII (January, 1942), 1–19.

A study in which measures of long-time and short-time pupil performance are obtained by administering a series of tests. The method by which these objective instruments of measurement form the bases for criteria of teaching ability is given in detail.

## SUPERVISION, CURRICULUM, AND INSTRUCTIONAL PROCEDURES

BELL, HARRY. "Comprehension in Silent Reading," *British Journal of Educational Psychology*, XII (February, 1942), 47–55.

In a study conducted with 77 boys attending a Scottish secondary school to measure comprehension in silent reading, it was found that intelligence, amount and rate of reading were positively correlated with comprehension. A detailed study of a poor comprehender is given.

BOLLMAN, THELMA A. "Relation of College-Entrance Requirements and the Secondary-School Curriculum," *The School Review*, L (April, 1942), 286–293.

A survey conducted among secondary school principals of Texas to determine facts and opinions concerning college-entrance requirements and the secondary school curriculum.

GAVIAN, RUTH WOOD. "What the Elementary-School Teacher Should Know About Economics," *Elementary School Journal*, XLII (April, 1942), 578–584.

Suggestions are presented on such economic aspects as shelter, farming, com-

munity helpers, conservation, and thrift and money management.

GILBERT, LUTHER C. and GILBERT, DORIS WILCOX. "Reading Before the Eye-Movement Camera Versus Reading Away From It," *Elementary School Journal*, XLII (February, 1942), 443–447.

Reactions of forty-seven fifth graders at the Whittier University Elementary School in Berkeley, California, to reading before or away from the eye-movement camera.

HILGERS, ROBERT J. "Practices and Techniques in Science Teaching," *Science Education*, XXVI (January, 1942), 16–21.

A condensation of a Master's thesis on a study of the practices and techniques prevalent in the teaching of science in the secondary schools of Minnesota.

HOLLAND, HENRIETTA. "Difficulties Involved in Long Division and Some Suggestions for Teaching the Process," *Elementary School Journal*, XLII (April, 1942), 585–596.

Types of difficulties in long division are presented with suggestions for teaching basic concepts and making manipulation meaningful.

JERSILD, ARTHUR T., GOLDMAN, BERNARD, JERSILD, CATHERINE L., and LOFTUS, JOHN J. "Studies of Elementary School Classes in Action, II. Pupil Participation and Aspects of Pupil-Teacher Relationships," *Journal of Experimental Education*, X (December, 1941), 119–137.

The method of direct observation of the classroom situation was employed in activity and control classes to investigate such aspects as the amount and nature of participation by individual pupils.

RUSSELL, DAVID H. "Voluntary Reading and Academic Achievements in Two Canadian High Schools," *The School Review*, L (February, 1942), 112–120.

A study conducted among three hundred pupils from grades nine through ten in two Saskatoon high schools to determine the relations between the amount and types of voluntary reading and academic achievements as measured by school marks and reading test scores.

SUTHERLAND, JOHN. "An Investigation into Some Aspects of Problem Solving in Arithmetic," *British Journal of Educational Psychology*, XII (February, 1942), 35–46.

Part II of the report of the investigation giving results and conclusions. By factor analysis it is found that three major factors: "g", a verbal factor, and a number factor are important in determining problem solving ability.

TETREAU, E. D. and FULLER, VARDEN. "Some Factors Associated with the School Achievement of Children in Migrant Families," *Elementary School Journal*, XLII (February, 1942), 423–431.

Some results of a state-wide study in Arizona on the school achievement of children in migrant families, from the point of view of the student of social organization.

THORNDIKE, ROBERT L., LOFTUS, JOHN J., and GOLDMAN, BERNARD. "Observations of Excursions in Activity and Control Schools," *Journal of Experimental Education*, X (December, 1941), 146–149.

An evaluation of the "activity" program in the New York City public

schools based upon observation of pupils on field trips and excursions outside the school building.

THORNDIKE, ROBERT L., LOFTUS, JOHN J., and GOLDMAN, BERNARD. "Observations of the Behavior of Children in Activity and Control Schools," *Journal of Experimental Education*, X (December, 1941), 138–145.

Further data on the effects of the "activity" program in the New York City public schools as compared with control classes.

WISE, HAROLD E. "A Determination of the Relative Importance of Principles of Physical Science for General Education," *Science Education*, XXV (December, 1941), 371–379; XXVI (January, 1942), 8–12.

Description of a method used to select principles and applications of these principles in physics. A sample of the 246 principles, the list of applications assigned to each principle, and the relative value of each principle as determined by the number of applications assigned to it, is printed in the January issue.

WORBOIS, G. M. "Language Development of Children in Two Types of Rural Environments," *Journal of Experimental Education*, X (December, 1941), 150–152.

From an analysis of test results obtained from the use of a socio-economic concept recognition test, word fluency test and basic language skills test, it was found that children in one-room schools did consistently poorer than did children from consolidated schools.

## CHILD WELFARE, GUIDANCE, AND DEVELOPMENT

BURNSIDE, LENOIR H. "An Experimental Program in Education of the Intellectually Gifted Adolescent," *The School Review*, L (April, 1942), 274–285.

The Honor-Work class of Monroe High School, Rochester, New York, receives special instruction on a modified "Dalton Plan," has the cooperation of the parents; and the indications are that the plan is successful.

DOLL, EDGAR A. "The Essentials of an Inclusive Concept of Mental Deficiency," *Journal of Mental Deficiency*, XLVI (October, 1941), 214–219.

The author presents the view that it is best to adhere to a symptom-complex clinical diagnosis of mental deficiency based on an all-inclusive concept.

ROGERS, CARL R. "The Criteria Used in a Study of Mental-Health Problems," *Educational Research Bulletin*, XXI (February, 1942), 29–40.

A report of the methodology employed in the survey of three selected elementary schools in Columbus to determine objectively what proportion of the students showed evidences of poor mental health.

THORNDIKE, ROBERT L. "Words and the Comics," *Journal of Experimental Education*, X (December, 1941), 110–113.

A vocabulary analysis of four complete comic books reveals the fact that they provide reading experience at the difficulty level of the upper elementary and junior high school.

TROW, WILLIAM CLARK. "Conflicting Codes of Morality in the Life of the Child," *Childhood Education*, XVIII (February, 1942), 256–262.

The author discusses the conflict between the will to be free and the struggle

to be subservient; and the implications this conflict has for the school.

TROW, WILLIAM CLARK. "Educational Psychology — Individual or Social?" *Journal of Consulting Psychology*, V (November–December, 1941), 265–269.

The author presents the view that educational psychology is both individual and social psychology applied to education.

WITTY, PAUL. "Children's Interest in Reading the Comics," *Journal of Experimental Education*, X (December, 1941), 100–104.

In a study of 334 children in grades four through six it was found that reading the comics is one of the most popular of all leisure activities among pupils.

WITTY, PAUL. "Reading the Comics—A Comparative Study," *Journal of Experimental Education*, X (December, 1941), 105–109.

A random sampling procedure among 2500 children in grades four through six indicates that interest in the comics is general and consistent from grade to grade.

### MEASUREMENT, STATISTICS, AND SCIENTIFIC TECHNIQUES

GUILFORD, J. P., LOVELL, CONSTANCE, and WILLIAMS, RUTH M. "Completely Weighted Versus Unweighted Scoring in an Achievement Examination," *Educational and Psychological Measurement*, II (January, 1942), 15–22.

In a comparison of weighted and unweighted scoring, it was found that completely weighted scoring did not yield a significant gain in reliability or validity of achievement examinations containing twenty to one hundred items.

JONES, HAROLD E. "Seasonal Variations in I. Q.," *Journal of Experimental Education*, X (December, 1941), 91–99.

The author examines 469 pairs of intelligence tests from nursery school records and finds that I. Q. gains were consistently, though not reliably, greater from fall-to-spring than from spring-to-fall.

PRICHARD, ELINOR and OJEMANN, RALPH H. "An Approach to the Measurement of Insecurity," *Journal of Experimental Education*, X (December, 1941), 114–118.

In a study on two groups of preschool children, one group designated as "secure," the other as "insecure," by their teachers, an analysis of behavior records was used to determine which items distinguish "secure" from "insecure" children.

TUSSING, LYLE. "An Investigation of the Possibilities of Measuring Personality Traits with the Strong Vocational Interest Blank," *Educational and Psychological Measurement*, II (January, 1942), 59–74.

A study to determine how the items on the Strong Vocational Interest Blank are related to scores made on the Allport–Vernon, Bell, and Bernreuter personality tests and on intelligence tests.

# Research News and Communications

**Address all research news and communications to Carter V. Good, Teachers College, University of Cincinnati, Cincinnati, Ohio.**

*Indiana University.*—During the school year, 1940–1941, the School of Education at Indiana University has published three analyses of the achievement of different university groups. One of these, *A Study of the English Usage, Spelling and Vocabulary of 251 Graduate Students at Indiana University,* showed that, according to the tests given, there was shocking lack of advance on the part of these students over the sophomore norms. In the other two studies the results agreed more nearly with what was expected. *An Analysis of the Achievement of 164 Sophomores Enrolled in Teacher-Training Courses at Indiana University* showed the sophomores represented to be slightly above standard norms when measured by certain English, reading, and general achievement tests; and *The Scholastic Achievement of Athletes at Indiana University* revealed that the athletes studied were somewhat below the total student body in average number of credit points earned.

An investigation of interest to the elementary school teacher is *The Teaching of Arithmetic to Low-Ability Students in the Elementary Schools,* a compilation and evaluation of various methods, devices, and suggestions concerning the teaching of arithmetic to low-ability pupils.

The two bulletins, *Legal Relations of Pupils and Parents to the Public Schools of Indiana—Parts I and II,* deal with compulsory attendance, courses of study, textbooks, health supervision, disciplinary problems, race segregation, transfer and transportation of school children, the church and the state in public education, and other problems that arise from the contacts of pupils and parents with the state school system.

Projects under way are concerned with students who transfer to other schools; education in Mexico; education in Guatemala; and a quantitative analysis of the content of textbooks and other books dealing with methods of teaching arithmetic, which is intended to show the historical development of the teaching of arithmetic in the United States from colonial times to the present.

*Children and Youth.*—An Emergency Cooperating Committee for Children and Youth has been established through the efforts of Marshall Field, chairman of the National Citizens Committee of the White House Conference on Children in a Democracy and George F. Zook, president of the American Council on Education.

Growing evidence that problems of children and youth will become increasingly severe during wartime is given as the compelling fact underlying establishment of the joint committee. Belief is expressed by committee members that the

health and vital interests of children and youth will be threatened during the war years unless adequate protective measures are taken, and that such measures are essential to defense and the nation's security.

The new committee will be composed of members of the White House Conference group, known as the National Citizens Committee, and of the American Youth Commission of the American Council on Education. Floyd W. Reeves, director of the American Youth Commission, will be chairman of the Cooperating Committee, with Homer Folks of the National Citizens Committee as vice chairman.

The new committee will devote primary attention to nation-wide dissemination of the findings and recommendations for children and youth that have resulted from the White House Conference on Children in a Democracy and from the American Youth Commission's six years of intensive research into problems of youth.

The recommendations for youth prepared by the American Youth Commission were made public on January 19, 1942, with the publication of *Youth and the Future*, the general report of the commission. This report has been formulated in recent months under the chairmanship of Owen D. Young, and throws direct light upon the important relationship between immediate wartime measures and the planning essential to post-war reconstruction.

The recommendations for children adopted by the White House Conference on Children in a Democracy were also formulated when the threat of war was already evident. However, the essential needs of children remain the same in war as in peace.

The reports in the main deal with different age groups, but since the welfare of children and youth is a joint problem, cooperative action in furthering public consideration of these two important long-range programs seems both logical and imperative. They represent recommendations that can prove of great value in avoiding much of the disruption which wartime activities might otherwise produce.